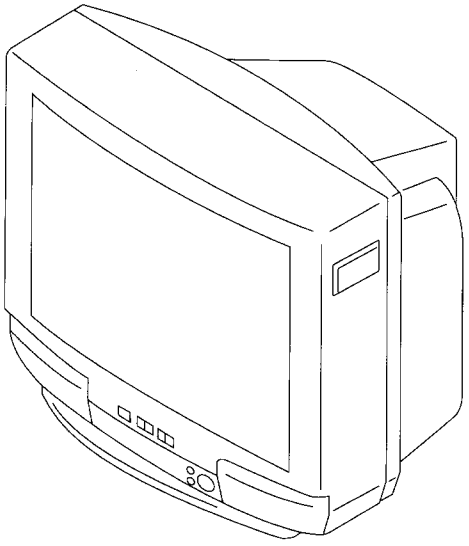
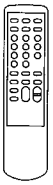
KV-G21M1/G21P1
KV-G21S1/G21S11
RM-870

SERVICE MANUAL





ME Model
KV-G21M1 *Chassis No. SSC-H45L-A*

GE Model
KV-G21P1 *Chassis No. SSC-J07C-A*

E Model
KV-G21M1 *Chassis No. SSC-J30B-A*

Thailand Model
KV-G21P1 *Chassis No. SSC-H85C-A*

Australian Model
KV-G21S1 *Chassis No. SSC-H84C-A*
KV-G21S11 *Chassis No. SSC-H84D-A*

Russian Model
KV-G21M1 *Chassis No. SSC-J17D-A*

Hong Kong Model
KV-G21M1 *Chassis No. SSC-J16A-A*

BG-1S CHASSIS

MODEL OF THE SAME SERIES	
KV-G21M1/G21P1 KV-G21S1/G21S11	

TRINITRON® COLOR TV

SONY®

ROFILM

SPECIFICATIONS

		Note
Power requirements	110-240 V AC, 50/60 Hz	
Power consumption (W)	Indicated on the rear of the TV	
Television system	B/G, I, D/K, M	KV-G21M1
	B/G	KV-G21P1/G21S1/G21S11
Color system	PAL, PAL60, SECAM, NTSC4.43, NTSC3.58	KV-G21M1
	PAL, PAL60, NTSC4.43, NTSC3.58 (AV IN)	KV-G21P1/G21S1/G21S11
Channel coverage		
B/G	VHF: E2 to E12/UHF: E21 to E69/CATV: S01 to S03, S1 to S41	KV-G21M1/G21P1
	VHF: 0 to 12, 5A, 9A/UHF: 28 to 69/CATV: S01 to S03, S1 to S41	KV-G21S1/G21S11
I	UHF: B21 to B68/CATV: S01 to S03, S1 to S41	KV-G21M1
D/K	VHF: C1 to C12, R1 to R12/UHF: C13 to C57, R21 to R60/ CATV: S01 to S03, S1 to S41, Z1 to Z39	KV-G21M1
M	VHF: A2 to A13/UHF: A14 to A79/ CATV: A-8 to A-2, A to W+4, W+6 to W+84	KV-G21M1
Audio output (speaker)	3W	
Inputs	Antenna: 75 ohms	
	VIDEO INPUT jacks: phono jacks Video: 1 Vp-p, 75 ohms Audio: 500 mVrms, high impedance	
Outputs	Earphone jack: mini jack	
	MONITOR OUT jacks: phono jacks Video: 1 Vp-p, 75 ohms Audio: 500 mVrms	
Picture tube	21 in.	
Tube size (cm)	54	Measured diagonally
Screen size (cm)	51	Measured diagonally
Dimensions (w/h/d, mm)	527 × 464 × 471	
Mass (kg)	22	

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

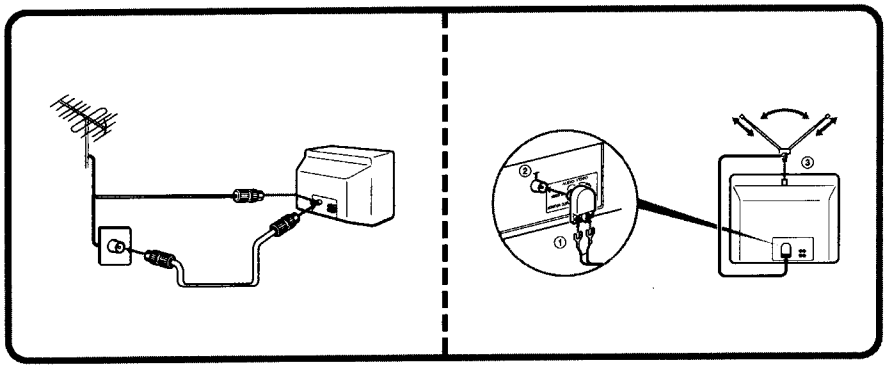
COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

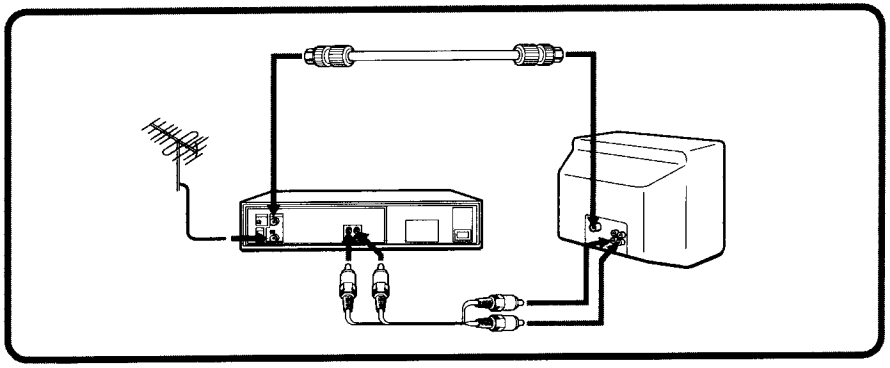
TABLE OF CONTENTS

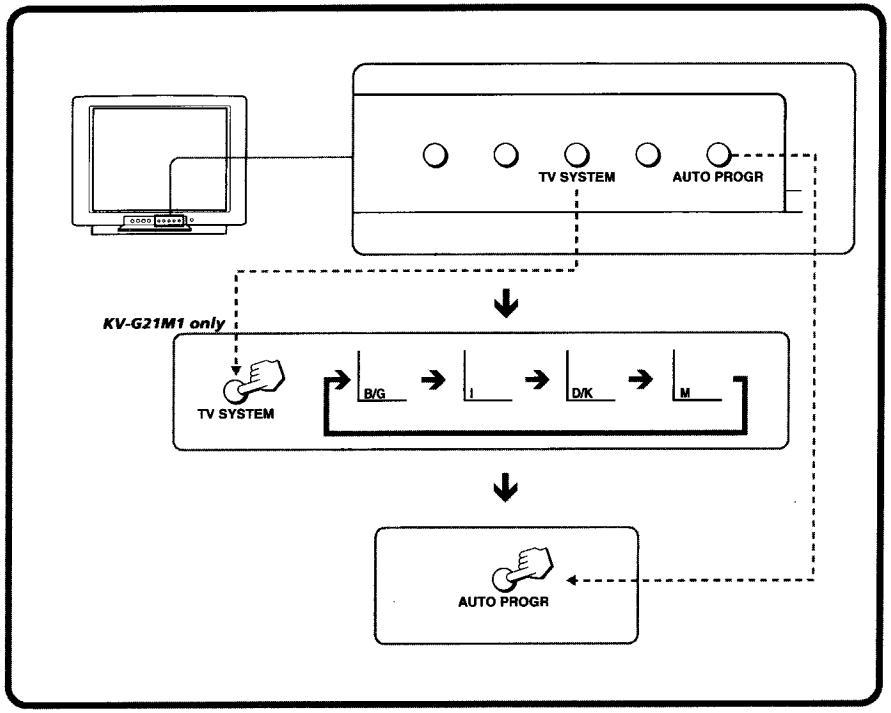
Section	Title	Page
1. GENERAL		4
2. DISASSEMBLY		
2-1.	Rear Cover Removal	9
2-2.	A Board Removal	9
2-3.	Service Position	10
2-4.	Replacement of Parts	10
2-5.	Demagnetization Coil Removal	11
2-6.	Picture Tube Removal	12
3. SET-UP ADJUSTMENTS		
3-1.	Beam Landing	13
3-2.	Convergence	14
3-3.	Focus Adjustment	16
3-4.	G2 (Screen) and White Balance Adjustments	16
4. CIRCUIT ADJUSTMENTS		
4-1.	Adjustments with Commander	17
4-2.	Adjustment Method	18
4-3.	A Board Adjustment after IC003 (Memory) Replacement	20
4-4.	Picture Distortion Adjustment	20
5. DIAGRAMS		
5-1.	Block Diagrams	21
5-2.	Circuit Boards Location	25
5-3.	Schematic Diagrams and Printed Wiring Boards	
(1)	Schematic Diagram of A Board	29
(2)	Schematic Diagrams of A1, C, F and V1 Boards	34
5-4.	Semiconductors	41
6. EXPLODED VIEWS		
6-1.	Chassis	43
7. ELECTRICAL PARTS LIST		45

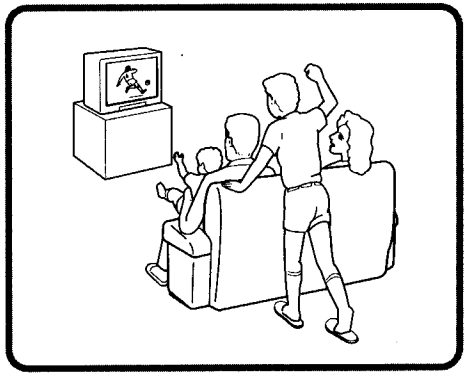
SECTION 1
GENERAL

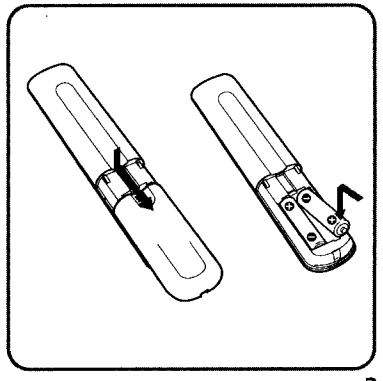
The operating instructions mentioned here are partial abstracts from the Operating Instructions Manual. The page numbers of the Operating Instruction Manual remain as in the manual.







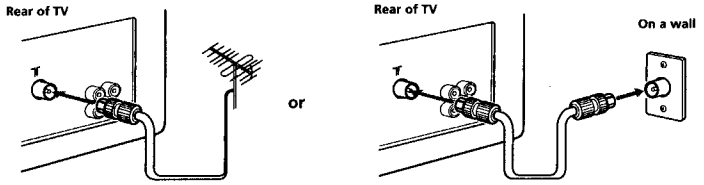




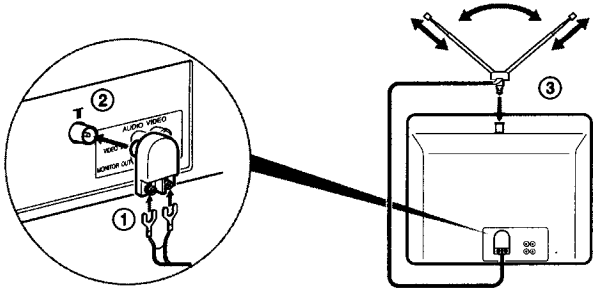
Connections

Connecting a VHF antenna or a combination VHF/UHF antenna — 75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable.
Plug the connector into the 𝕋 (antenna) socket at the rear of the TV.



Connecting an indoor antenna



Note

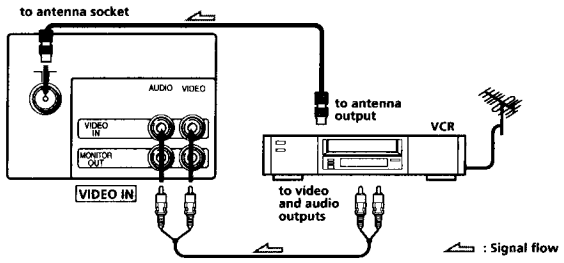
- You are advised to use an outdoor antenna for better reception.

Connecting optional equipment

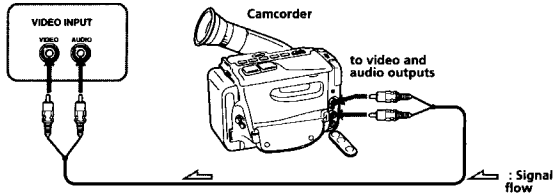
You can connect optional audio/video equipment to your TV such as a VCR, multi disc player, camcorder or video game.

Connecting video equipment using VIDEO IN jacks

Rear of TV



Front of TV

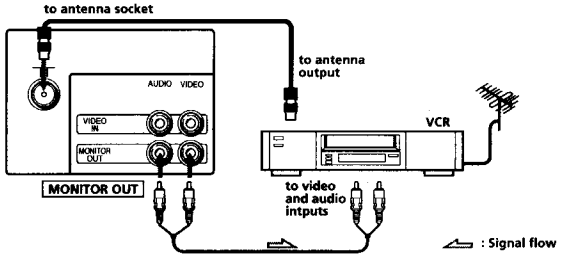


When using the video input jacks

Do not connect video equipment to the VIDEO input jacks at the front and the rear of your TV simultaneously; otherwise the picture will not be displayed properly on the screen.

Connecting audio/video equipment using MONITOR OUT jacks

Rear of TV



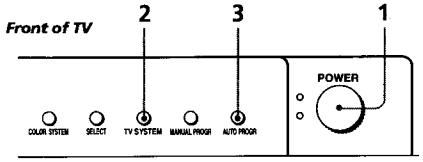
When recording through the MONITOR OUT jacks

If you change the channel or video input while recording with a VCR, the channel or video input you are recording also will be changed.

Presetting channels

Presetting channels automatically

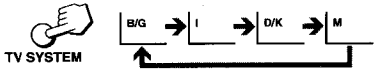
You can preset up to 80 TV channels in numerical sequence from program position 1.



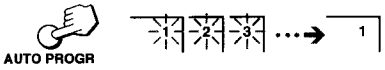
1 Press POWER.

When the TV is in standby mode after pressing POWER, press POWER on the remote commander.

2 Press TV SYSTEM until your local TV system appears (KV-G14C1/G21C1 only).



3 Press AUTO PROGR.



To start presetting channels automatically from the specified program position

1 Press MANUAL PROGR.
2 Press TV SYSTEM to select your local TV system (KV-G14C1/G21C1 only).
3 Press PROGR +/– to select the program position.
4 Press AUTO PROGR.

Presetting channels manually

To change the channel for a particular program position or to receive a channel with a weak signal, preset the channel manually.

1 Press MANUAL PROGR.

2 Press PROGR +/– until the required program position appears on the screen.

3 Press TV SYSTEM until your local TV system appears (KV-G14C1/G21C1 only).

4 Press VOLUME +/– on the TV until the required channel picture appears on the screen.

5 Press MANUAL PROGR.

If the TV system is not properly selected (KV-G14C1/G21C1 only)

The color of the picture may be poor and/or the sound may be noisy. In this case, select the appropriate TV system.

1 Press PROGR +/– to select the program position.
2 Press TV SYSTEM until the picture and sound become normal.

Notes (KV-G14C1/G21C1 only)

- If you do not know your local TV system, consult your nearest authorized service center or dealer.
- The setting of the TV SYSTEM is memorized for each program position.

Disabling program positions

By disabling unused or unwanted program positions, you can skip those positions when you press PROGR +/–.

1 Press PROGR +/– until the unused or unwanted program position appears on the screen.

2 Press MANUAL PROGR.

3 Press PIC MODE on the remote commander.

4 Press MANUAL PROGR.

To cancel the skip setting

Preset the channel manually or automatically again.

Watching the TV

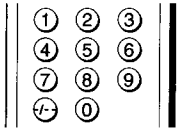
1 Press POWER to turn the TV on.

When the TV is in standby mode after pressing POWER, press POWER on the remote commander.

2 Select the TV channel you want to watch.

To select a channel directly

Press a number button.



To select a two-digit channel, press "-/--" before the number buttons.
For example: to select channel 25, press "-/--," and then "2" and "5."

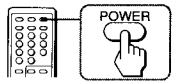
To scan through channels

Press PROGR +/– until the channel you want appears.

3 Press VOL +/– to adjust the volume.

Switching off the TV

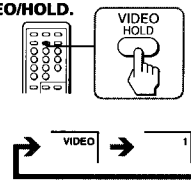
To switch off the TV temporarily, press POWER on the remote commander.



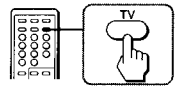
To switch off the TV completely, press POWER on the TV.
If the power on the TV is turned off in standby mode, the STANDBY indicator may remain alight for a while.

Watching the video input

Press VIDEO/HOLD.

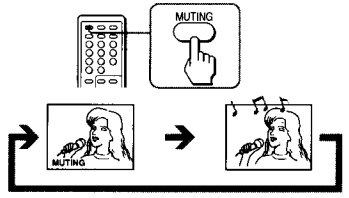


To watch TV, press TV.



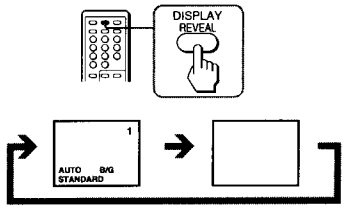
Muting the sound

Press MUTING.



Displaying on-screen information

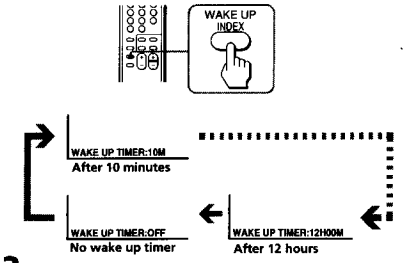
Press DISPLAY/REVEAL.
The program position, local system, and TV settings are displayed on the screen.



Setting the Wake Up Timer

You can set the TV to turn on automatically after the period of time you want.

1 Press WAKE UP/INDEX repeatedly to set the timer.
The on-screen display appears and the WAKE UP indicator lights up.



2 If you want a particular TV program or video input to be displayed using the Wake Up Timer, select the TV program or video mode.

3 Press POWER on the remote commander or set the Sleep Timer to turn off the TV in standby mode.

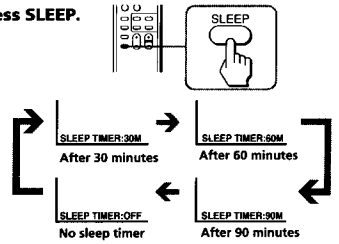
To cancel the Wake Up Timer, press WAKE UP/INDEX repeatedly until "WAKE UP TIMER: OFF" appears, or turn off the main power of the TV.

Notes
- The Wake Up Timer starts immediately after the on-screen display disappears.
- The last TV program position or video mode just before the TV turns into standby mode will appear when the TV turns on using the Wake Up Timer.
- If no buttons or controls are pressed for more than two hours after TV is turned on using the Wake Up Timer, the TV automatically turns into standby mode. When you want to continue watching the TV, press any button or control on the TV or remote commander.

Setting the Sleep Timer

You can set the TV to turn off automatically after the period of time you want.

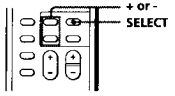
Press SLEEP.



To cancel the Sleep Timer, press SLEEP repeatedly until "SLEEP TIMER: OFF" appears, or turn the TV off.

Changing the on-screen display language

If you prefer Chinese to English, you can change the on-screen display language. You can use buttons on both the remote commander and the TV.

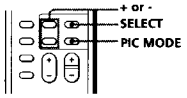


1 Press SELECT until the screen appears as follow:

2 Press + or – to select "中文".

Note
- You can also use VOLUME +/– on the TV to select the on-screen display language.

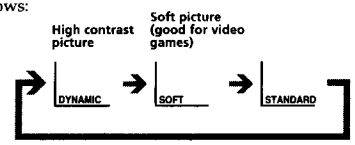
Adjusting the picture



Selecting the picture mode

Press PIC MODE until the mode you want appears.

Each time you press PIC MODE, the screen changes as follows:

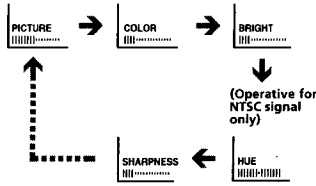


Note
- If you change the picture mode after the following adjustments, the adjustment changes in accordance with the picture mode.

Adjusting the picture setting

1 Press SELECT until the item you want to adjust appears.

Each time you press SELECT, the screen changes as follows:



2 Press +/– to adjust the item.

3 To adjust other items, repeat steps 1 and 2.

Note
- You can also use VOLUME +/– on the TV to adjust the picture setting.

If the color of the picture is abnormal

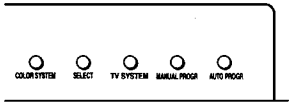
When receiving programs through the 𝕋 terminal: Press TV SYSTEM (KV-G21M1 only) or COLOR SYSTEM or adjust the color setting until the color becomes normal.

Note
- Normally set COLOR SYSTEM to AUTO.

If the sound is distorted or noisy (KV-G21M1 only)

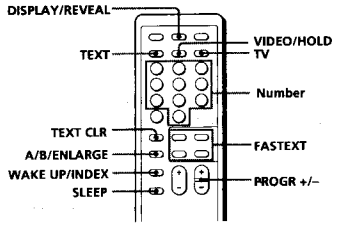
When receiving programs through the 𝕋 terminal: Press TV SYSTEM until the sound becomes clear.

Front of TV



KV-G21S11 only

Viewing Teletext



Displaying Teletext

1 Select a TV channel which carries the Teletext broadcast you want to watch.

2 Press TEXT to display the Teletext.
A Teletext page is displayed (normally the index page). If there is no Teletext broadcast, 100 is displayed at the top left corner of the screen.

To cancel the Teletext display, press TV.

Superimposing a Teletext page on the TV picture

Press TEXT.
Each time you press TEXT, the screen changes as follows:

→ Teletext → Teletext and TV → TV

Checking the contents of a Teletext service (INDEX)

Press WAKE UP/INDEX to display an overview of the Teletext contents and page numbers.

Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT page is broadcasted, a color-coded menu appears at the bottom of the screen. The colors of the menu correspond to the RED, GREEN, YELLOW, and CYAN buttons on the remote commander.

Press the color button which corresponds to the color-coded menu.
The page is displayed after a few seconds.

Selecting a Teletext page

To input the three-digit page number of the Teletext page, press the number buttons.
If you make a mistake, key in the correct page number again.

To access the next or previous page, press PROGR +/–.

Holding a Teletext page (subpage)

Press VIDEO/HOLD.
The HOLD symbol "HOLD" is displayed at the top left corner of the screen.

To resume normal Teletext operation, press VIDEO/HOLD again or TEXT.

Revealing concealed information

Press DISPLAY/REVEAL.
To conceal the information, press DISPLAY/REVEAL again.

Enlarging the Teletext display

Press A/B/ENLARGE.
Each time you press A/B/ENLARGE, the Teletext display changes as follows:

→ Enlarge upper half → Enlarge lower half → Normal size

Waiting for a Teletext page while watching a TV program (TEXT CLEAR)

1 Key in the page number of the Teletext that you want to refer, then press TEXT CLR.

2 When the page number is displayed on the screen, press TEXT to switch the Teletext on.

Troubleshooting

If you have any problems, read this manual again and check the countermeasure for each of the symptoms listed below.
If the problem persists, contact your nearest authorized service center or dealer.

Snowy picture
Noisy sound

→ Check the antenna.
→ Check the antenna connection on the TV and on the wall.
→ Check the TV SYSTEM setting (KV-G21M1 only).

Dotted lines or stripes

→ This may be caused by local interference (e.g. cars, neon signs, hair dryers, etc.). Adjust the antenna for minimum interference.

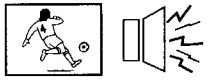
Double images or "ghosts"

→ This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

Note on the remote commander

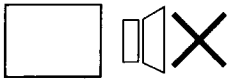
- The supplied remote commander is used on several models of the TV. If you do not find insructions for some controls that are on the remote commander, that means your TV does not employ the features of those controls, e.g. TEXT.

Good picture
Noisy sound



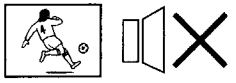
→ Check the TV SYSTEM setting (KV-G21M1 only).

No picture
No sound



→ Press POWER.
→ Check the antenna connection.
→ Check the VCR connections.
→ Check the power cord connection.
→ Check the standby mode.

Good picture
No sound



→ Press VOLUME +.
→ Press MUTING.

No color

→ Adjust the COLOR level in the on-screen display.
→ Check the COLOR SYSTEM setting.

TV cabinet creaks

→ Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

Note on the TV system

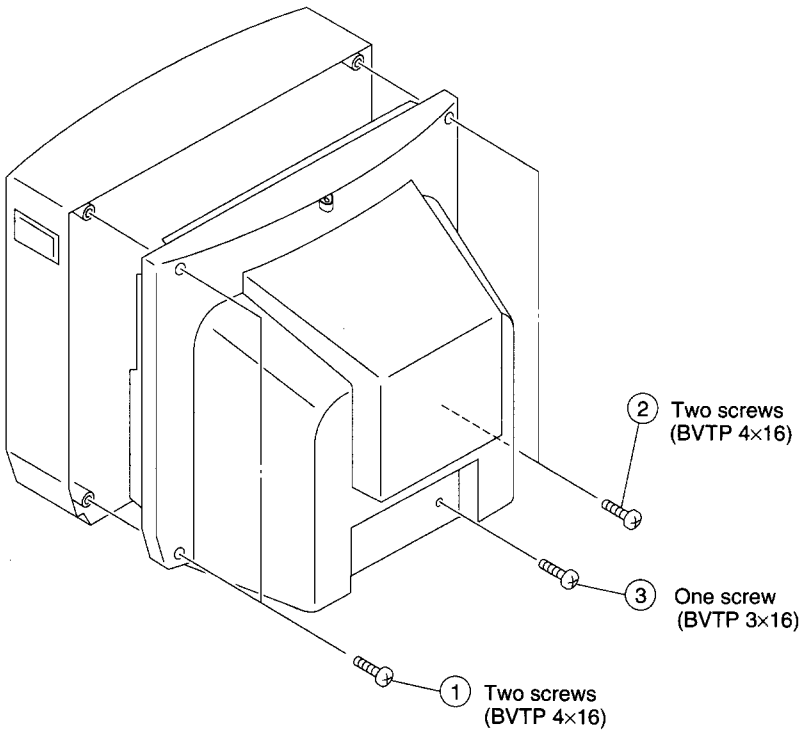
- All of the operations on the TV system in this manual are applied for the KV-G21M1 models only. The TV SYSTEM button is not used on the KV-G21P1/G21S1/G21S11 models.

Information

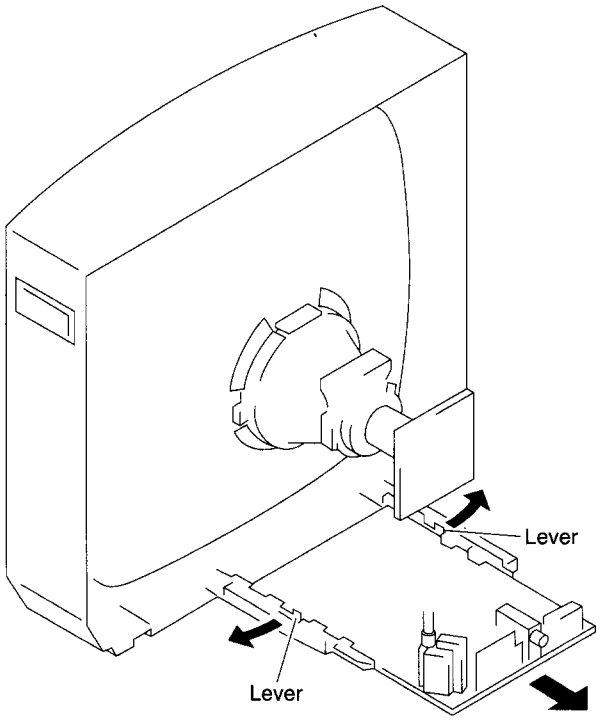
- You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

SECTION 2
DISASSEMBLY

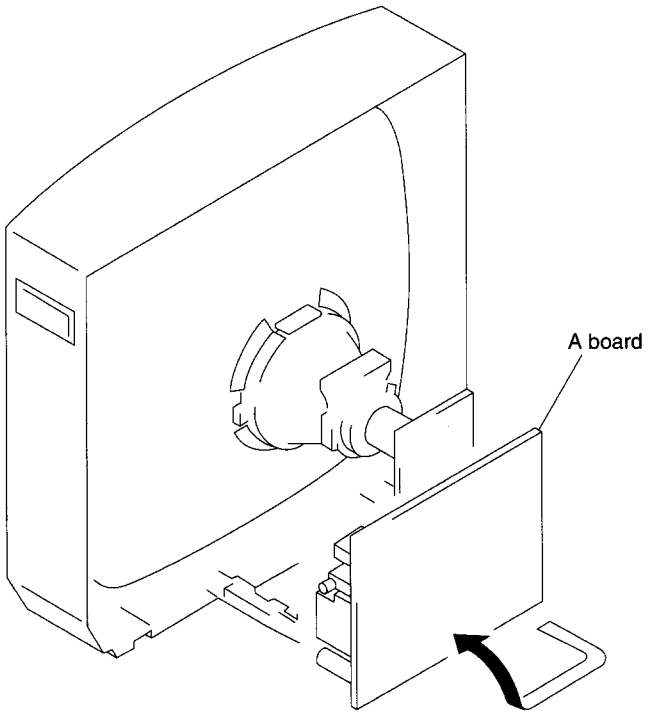
2-1. REAR COVER REMOVAL



2-2. A BOARD REMOVAL



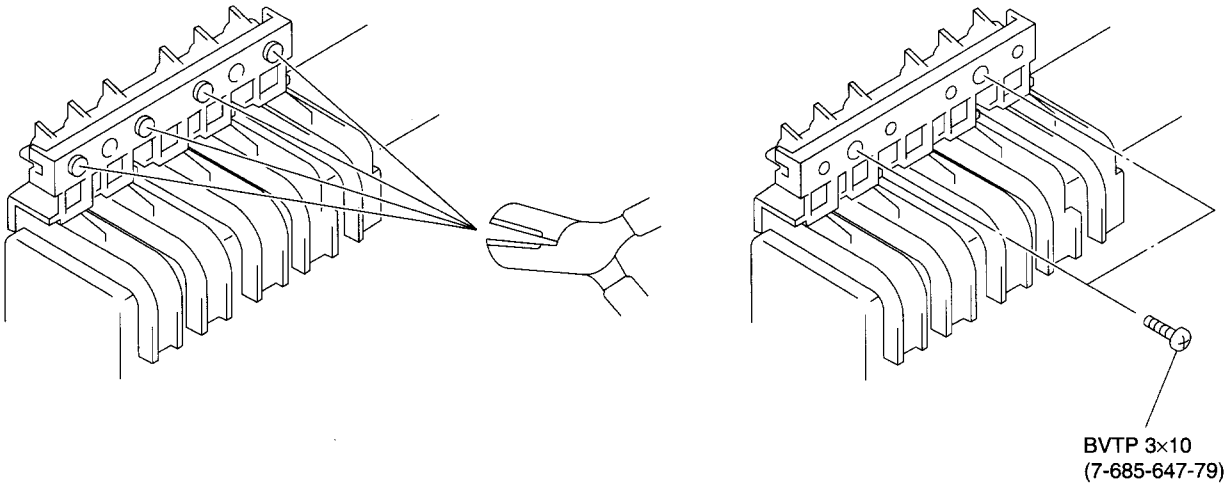
2-3. SERVICE POSITION



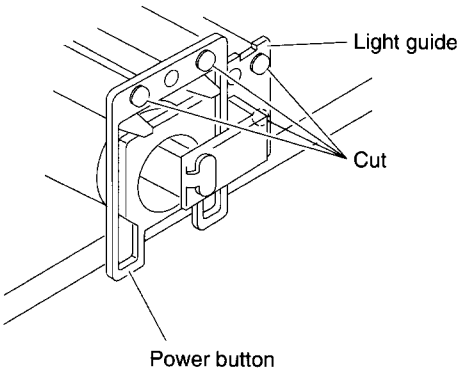
2-4. REPLACEMENT OF PARTS

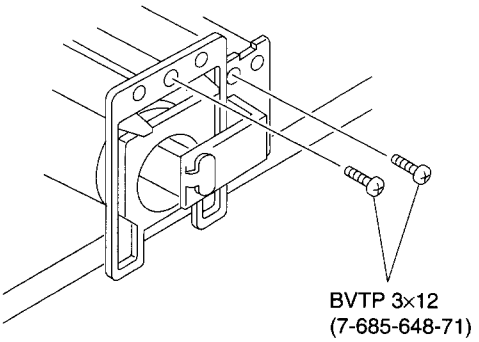
For replacement of the Multi Button, Power Button and Light Guide, cut the welded portions from them, exchange with the new parts, and fix them with screws (+BVTP) respectively.

2-4-1. REPLACEMENT OF MULTI BUTTON

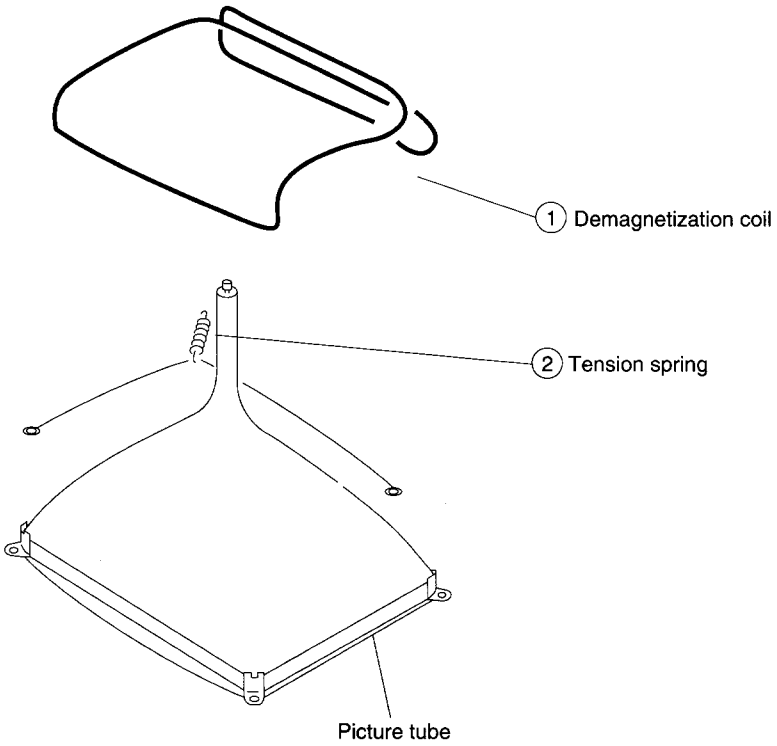


2-4-2. REPLACEMENT OF LIGHT GUIDE, POWER BUTTON

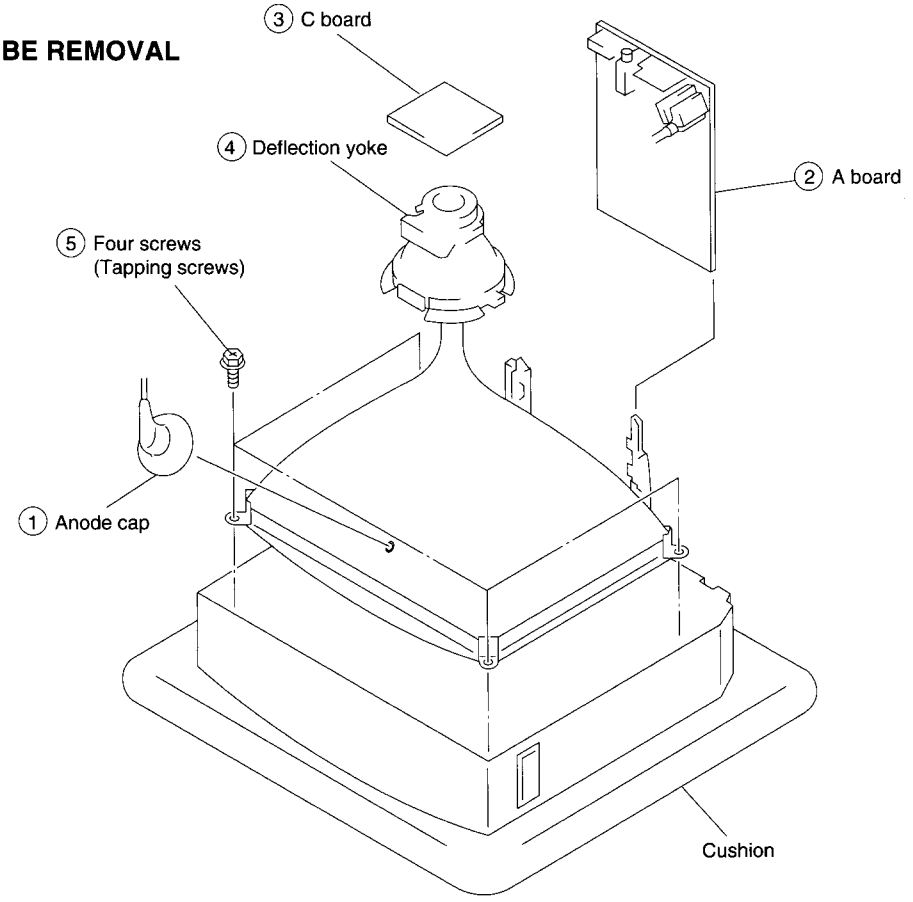




2-5. DEMAGNETIZATION COIL REMOVAL



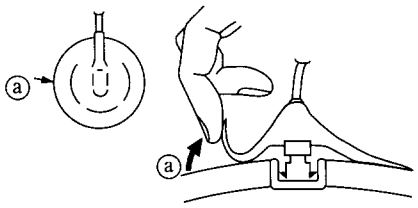
2-6. PICTURE TUBE REMOVAL



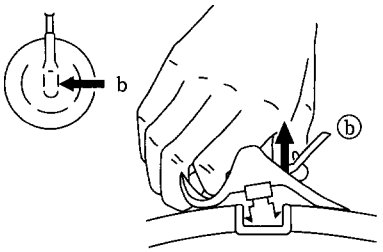
•REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

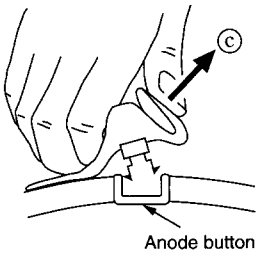
•REMOVING PROCEDURES



① **Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ**



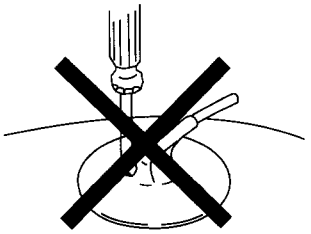
② **Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ**

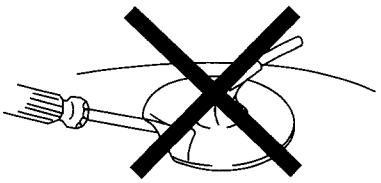


③ **When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ**

• HOW TO HANDLE AN ANODE-CAP

① **Don't hurt the surface of anode-caps with sharp shaped material!**
② **Don't press the rubber too hard so as not to hurt inside of anode-caps!**
A material fitting called the shatter-hook terminal is built in the rubber.
③ **Don't turn the foot of rubber over hardly!**
The shatter-hook terminal will stick out or hurt the rubber.





SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:
PICTURE control ..... normal
BRIGHTNESS control ..... normal

Perform the adjustments in order as follows :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

Preparations :

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
   Contrast } normal
   Brightness normal }
2. Set the pattern generator raster signal to green.
3. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
   (See Figures 3-1 through 3-3.)
4. Move the deflection yoke forward and adjust so that entire screen is green. (See Figure 3-1.)
5. Switch the raster signal to blue, then to red and verify the condition.
6. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
7. If the beam does not land correctly in all the corners, use a magnet to adjust it.
   (See Figure 3-4.)

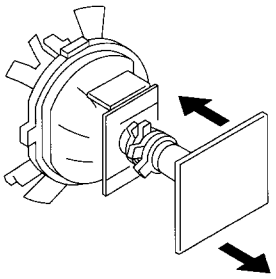


Fig. 3-1

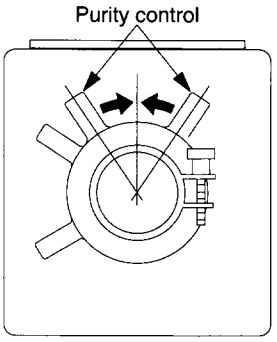


Fig. 3-2

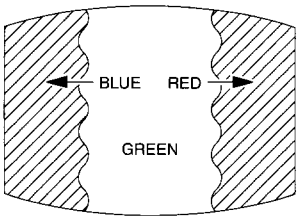


Fig. 3-3

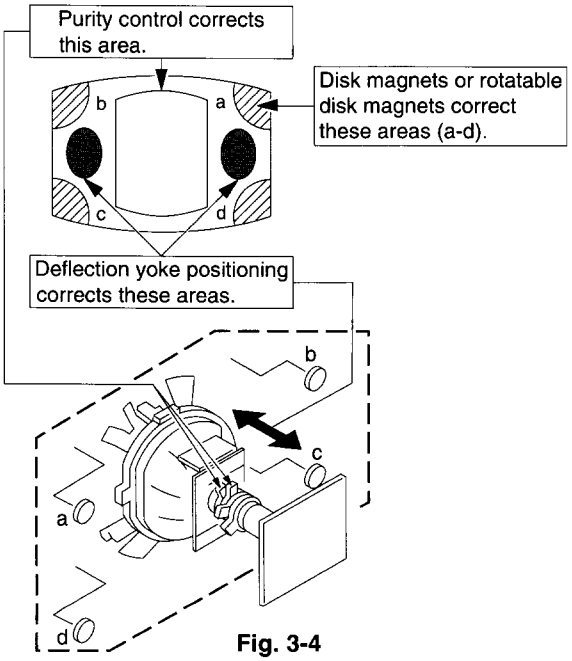


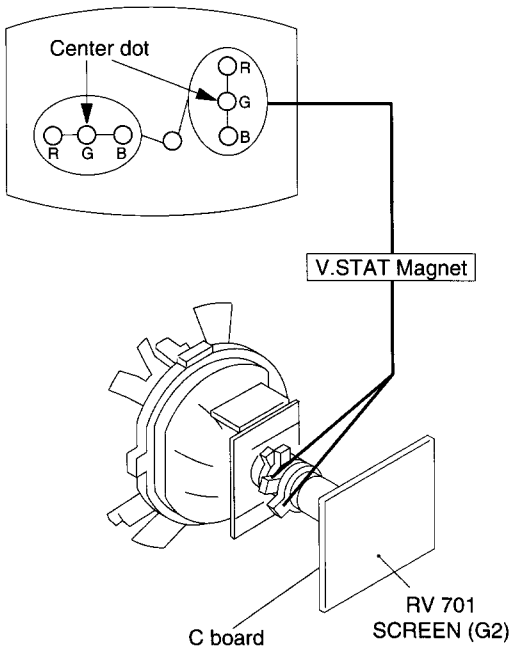
Fig. 3-4

3-2. CONVERGENCE

Preparations :

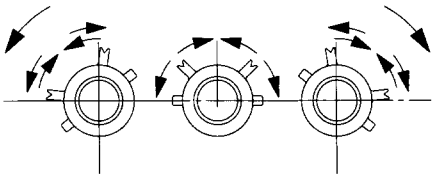
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

(1) Horizontal and Vertical Static Convergence

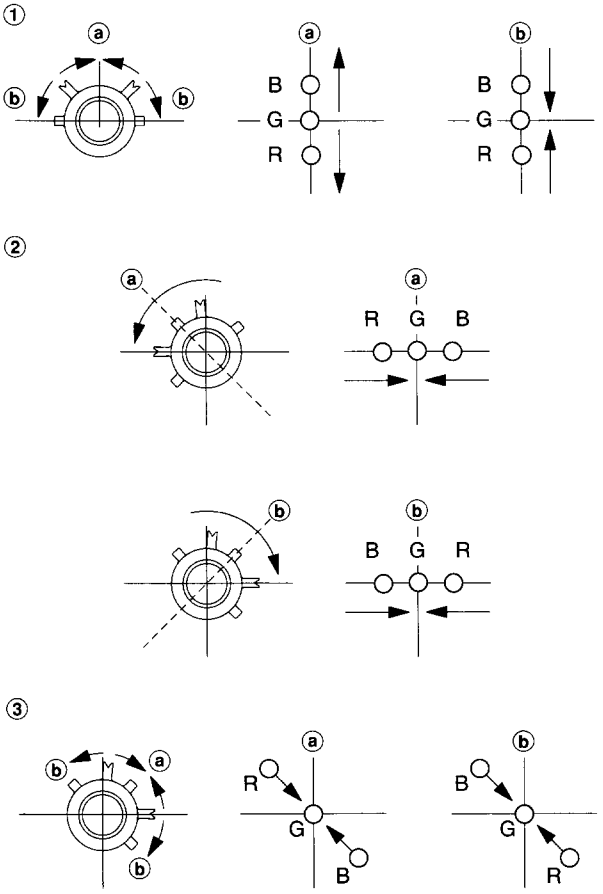


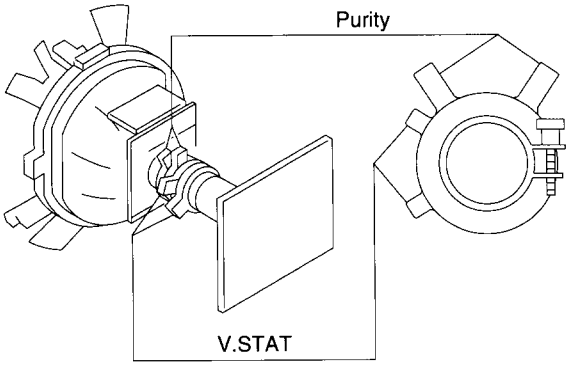
1. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving horizontally), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.

- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



3. If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green, and blue points move as shown below.



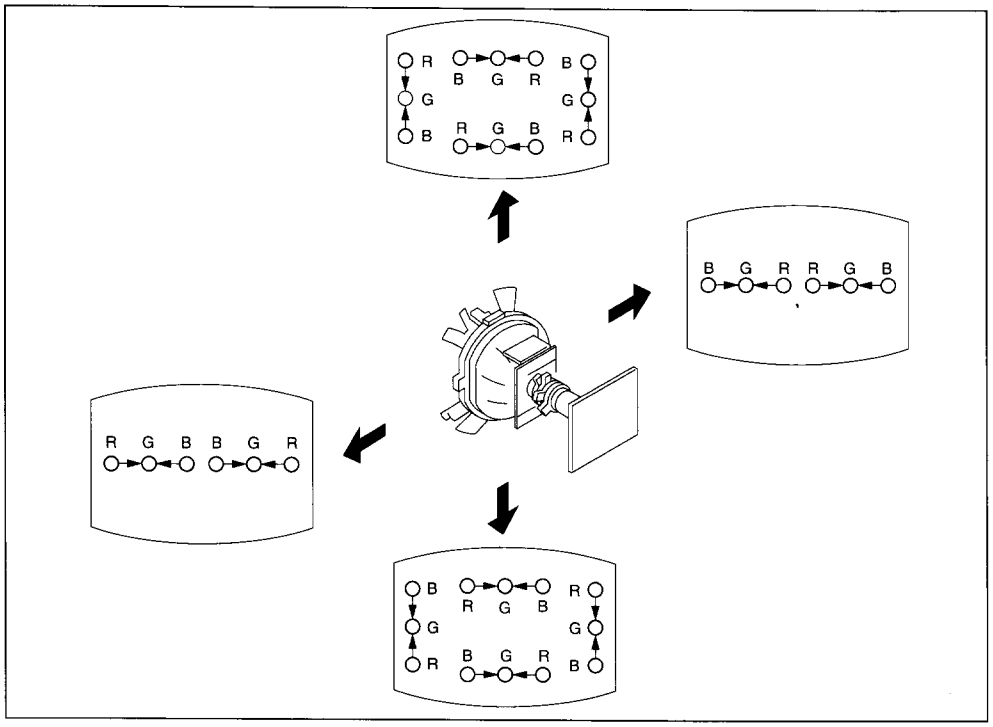


(2) Dynamic Convergence Adjustment

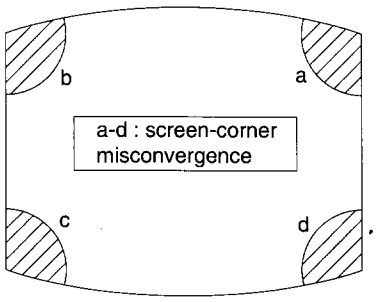
Preparations :

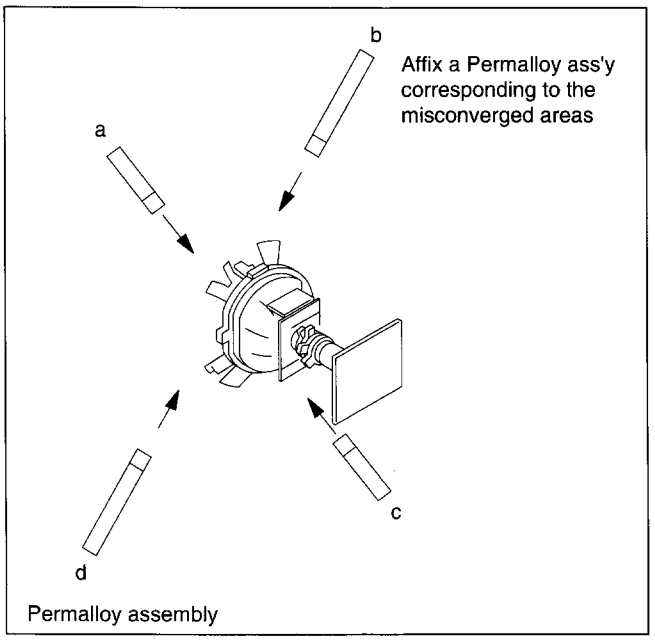
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the deflection yoke spacer.



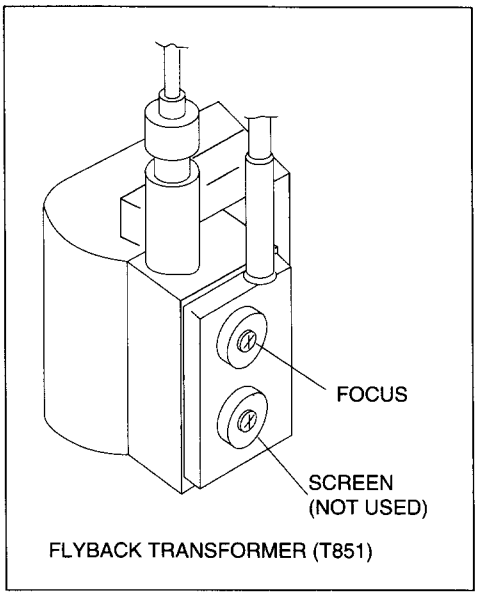
(3) Screen-corner Convergence





3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for the best focus.



Note: Screen VR is not used.

a. AN ITEM OF ADJUSTMENT

Item number	Adjustment item	Initial DATA	Note
09	RDR	25	WHITE POINT R
0A	GDR	20	WHITE POINT G
0B	BDR	20	WHITE POINT B

b. METHOD OF CANCELLATION FROM SERVICE MODE

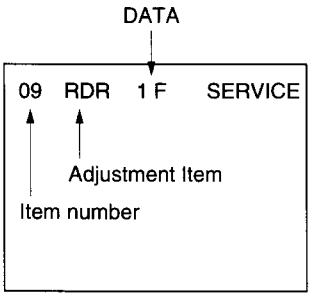
Set the standby condition (Press [POWER] button on the commander) in the next place, press [POWER] button again, hereupon it becomes TV mode.

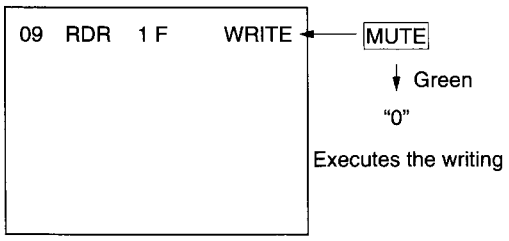
c. METHOD OF WRITE FOR MEMORY

1) Set to Service Mode.
2) Press [1] (UP) and [4] (DOWN), select an item of adjustments.
3) Press [MUTE] button indicate WRITE (Green) on screen.
4) Press [0] button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

1) After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again, confirm they were adjusted.

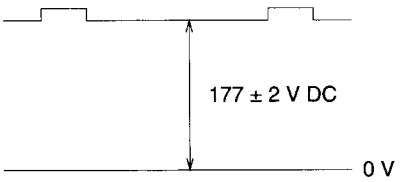




3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT (RV701)

1) Set the PICTURE and BRIGHTNESS to normal.
2) Put to VIDEO input mode without signals.
3) Connect R, G, and B of the C board cathode to the oscilloscope.
4) Adjust G2 (RV701) volume to the value below.



2. WHITE BALANCE ADJUSTMENTS

1) Set the Service Mode.
2) Input an entire white signal.
3) Set the PICTURE to maximum.
4) Select RDR(09) with [1] and [4], and then set the level to 25 with [3] and [6].
5) Select GDR(0A) and BDR(0B) with [1] and [4] and adjust the level with [3] and [6] for the best white balance.
6) Write into the memory by pressing [MUTE] → then [0].

SECTION 4
CIRCUIT ADJUSTMENTS

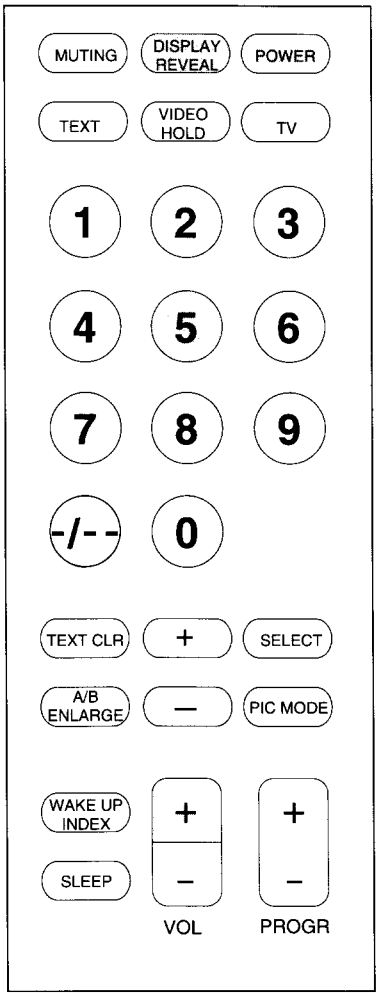
4-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-870 that comes with this unit.

Entering service mode

With the unit on standby
↓
"DISPLAY"
↓
"5"
↓
"VOL (+)"
↓
"POWER"

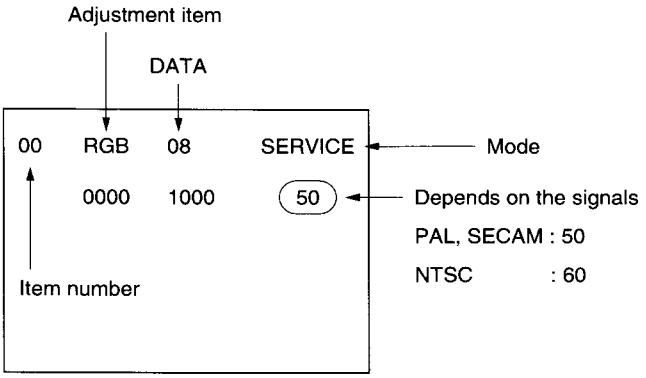
The operation sequence puts the unit into service mode.



"1", "4"	Raise/lower the service item number
"3", "6"	Raise/lower the data
"MUTING"	Writes
"0"	Executes the writing

"7", "0"	The data all becomes the values in memory
"8", "0"	User control all goes to the standard state
"5", "0"	Service data initialization (Be sure not to use usually.)
"2", "0"	Write 50Hz adjustment data to 60Hz, or viceversa.

The screen display is :



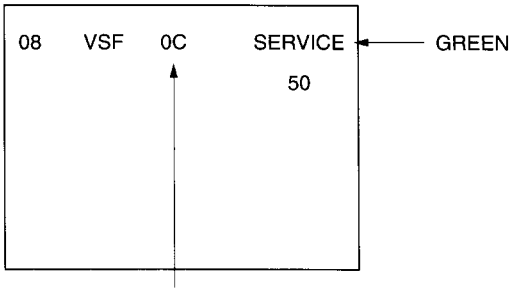
"1", "4"	Select the adjustment item.
↓	
"3", "6"	Raise/lower the data.
↓	
"MUTING"	Writes
↓	
"0"	Executes the writing.

4-2. ADJUSTMENT METHOD

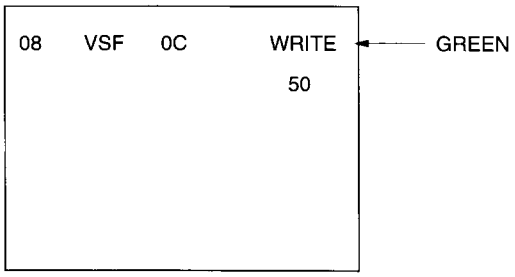
Item Number 08

This explanation uses V-SHIFT as an example.

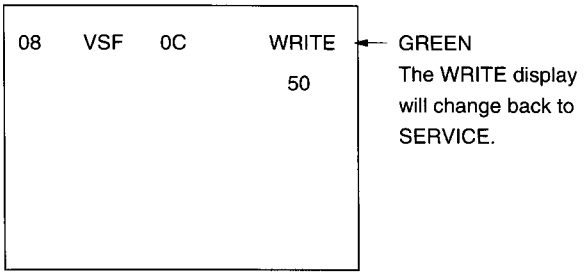
1. Select 08 V-SHIFT with the "1" and "4" buttons.
2. Raise/lower the data with the "3" and "6" buttons.
3. Select the optimum state. (The standard is 0F for PAL reception.)
4. Write with the MUTE button. (The SERVICE display will change to WRITE)
5. Execute the writing with the "0" button. (The WRITE display will change back to SERVICE.)



Adjusted with "3" and "6" buttons



Written with "MUTE"



Write executed with "0"

Use the same method for Items Number 00-2C. Use "1" and "4" to select the adjustment item, use "3" and "6" to adjust, write with "MUTE", then execute the write with "0".

Adjustment Item Table

Item number	Adjustment Item	Data range	Initial data	Standard data	Note	Device
00	HSF	00–3F	2B	50: 60:	H SHIFT	(TDA8366)
01	HSZ	00–3F	23	50: 60:	H SIZE	(TDA8366)
02	PAP	00–3F	21	50: 60:	PIN AMPLITUDE	(TDA8366)
03	CNP	00–3F	29	50: 60:	CORNER PIN	(TDA8366)
04	TLT	00–3F	20	50: 60:	TILT	(TDA8366)
05	VSL	00–3F	20	50: 60:	V SLOPE	(TDA8366)
06	VAP	00–3F	1D	50: 60:	V AMPLITUDE	(TDA8366)
07	SCR	00–3F	20	50: 60:	S CORRECTION	(TDA8366)
08	VSF	00–3F	20	50: 60:	V SHIFT	(TDA8366)
09	RDR	00–3F	2A		WHITE POINT R	(TDA8366)
0A	GDR	00–3F	20		WHITE POINT G	(TDA8366)
0B	BDR	00–3F	20		WHITE POINT B	(TDA8366)
0C	YDL	00–0F	00		Y DELAY ADJUSTMENT	(TDA8366)
0D	FO	00–02	00	TV: 00 VIDEO: 01 TEXT: 01	PHI-1 TIME CONSTANT	(TDA8366)
0E	AGC	00–3F	06	TV: VIDEO:	AGC TAKE OVER	(TDA8366)
0F	VSW	00–01	00	TV: VIDEO:	VIDEO MUTE	(TDA8366)
10	FOR	00–03	00		FORCED FIELD FREQ.	(TDA8366)
11	DL	00–01	00		INTERLACE	(TDA8366)
12	POC	00–01	00		SYNCHRONISATION	(TDA8366)
13	NCI	00–01	00	50: 60:	V DIVIDER MODE	(TDA8366)
14	VID	00–01	00	50: 60:	VIDEO IDENT MODE	(TDA8366)
15	HCO	00–01	00	50: 60:	EHT TRACKING MODE	(TDA8366)
16	EVG	00–01	00	50: 60:	ENABLE V GUARD	(TDA8366)
17	SBL	00–01	00	50: 60:	SERVICE BLANKING	(TDA8366)
18	PRD	00–01	00	50: 60:	OVER-VOLTAGE INPUT	(TDA8366)
19	EXP	00–03	00		V DEFLECTION MODE	(TDA8366)
1A	SFM	00–01	01		H FREQ. DURING SWON	(TDA8366)
1B	PHL	00–01	00		COLOR X-TAL PLL	(TDA8366)
1C	COR	00–01	00		NOISE CORING PEAK	(TDA8366)
1D	PMX	00–3F	33		PICTURE MAX DATA	(TDA8366)
1E	SBR	00–7F	4B		SUB-BRIGHTNESS	(TDA8366)
1F	SHU	00–0F	07		SUB-HUE	(TDA8366)
20	SSH	00–03	01	TV: 01 VIDEO: 03	SUB-SHARPNESS	(TDA8366)
21	SCL	00–3F	3F	50: 60:	SUB-COLOR	(TDA8366)
22	TXP	00–0F	0A		Text Picture cont.	(SAA5281)
23	MXP	00–0F	0B		Text Mix mode Pic.	(SAA5281)
24	BKP	00–3F	00		Blk off Picture	(CXP85200)
25	ODL	00–FF	10		Power ON Delay	(CXP85200)
26	OFR	00–0F	00		Remo. con. RGB OUT	(CXP85200)
27	OFM	00–0F	00		Main power RGB OUT	(CXP85200)
28	OSH	00–3F	0A		OSD Position H	(CXP85200)
29	MUT	00–01	01		No Sync. Mute	(CXP85200)
2A	ABL	00–01	01		Bright ABL	(CXP85200)
2B	OP0	00–FF	40		Option 0	(CXP85200)
2C	OP1	00–FF	07		Option 1	(CXP85200)

※ 50 ··· 50Hz data 60 ··· 60Hz data
※ Standard data listed on the Adjustment Item Table are reference values, therefore differ per model.

No. 2B OP0 * Input data are different according to models

Item	–	AV Input		–	–	–	–	Saudi
Normal	0	1	0	0	0	0	0	0

No. 2C OP1

Item	–	–	–	TV System		NTSC	SECAM	Chin
Normal	0	0	0	0	0	1	1	1

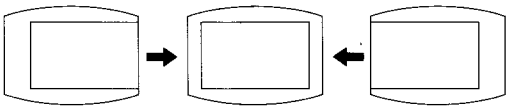
4-3. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.
2. Press commander buttons "5" and "0" (Data Initialize), and "2" and "0" (Data Copy) to initialize the data.
3. Call each item number, and check if the respective screen shows the normal picture.
   In case some items are not well-adjusted, give them fine adjustment.
   Write the data per each item number (MUTE + 0).
4. Select item numbers "2B" (OP0) and "2C" (OP1) and respectively set the bit per model with command buttons "3" and "6".
5. Press commander buttons "8" and "0" (Test Normal) to return to the data that was set on the shipment from the factory.
   (= Cancel Service Mode.)

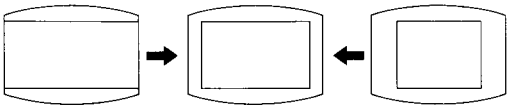
4-4. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 08

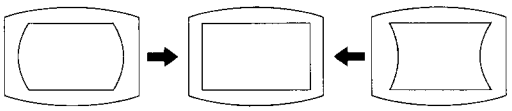
00 HSF (H SHIFT)



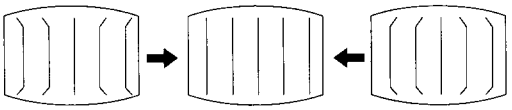
01 HSZ (H SIZE)



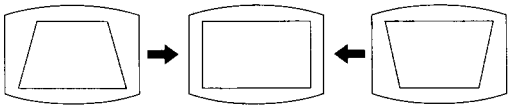
02 PAP (PIN AMPLITUDE)



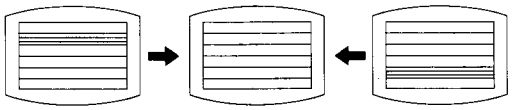
03 CNP (CORNER PIN)



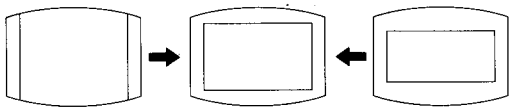
04 TLT (TILT)



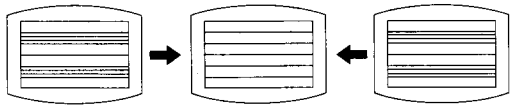
05 VSL (V SLOPE)



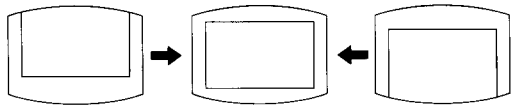
06 VAP (V AMPLITUDE)



07 SCR (S CORRECTION)



08 VSF (V SHIFT)



4-3. A BOARD, ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.

2. Press commander buttons "5" and "0" (Data Initialize), and "2" and "0" (Data Copy) to initialize the data.

3. Call each item number, and check if the respective screen shows the normal picture.
   In case some items are not well-adjusted, give them fine adjustment.
   Write the data per each item number (MUTE + 0).

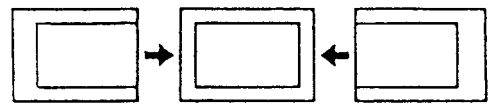
4. Select item numbers "2A" (OP0) and "2B" (OP1) for mono, and 3F (OP0) and "40" (OP1) for STEREO, and respectively set the bit per model with command buttons "3" and "6".

5. Press commander buttons "8" and "0" (Test Normal) to return to the data that was set on the shipment from the factory.
   (= Cancel Service Mode.)

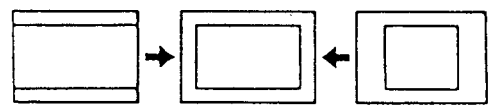
4-4. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 08

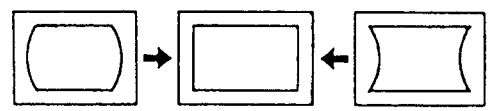
00 HSF (H.SHIFT)



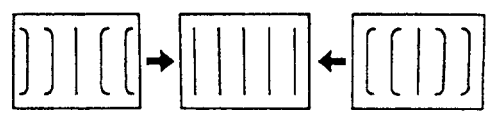
01 HSZ (H SIZE)



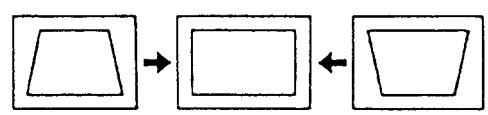
02 PAP (PIN AMP)



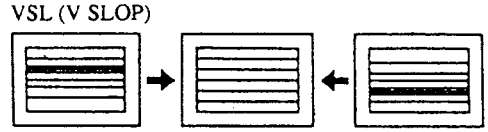
03 CNP (CORNER PIN)



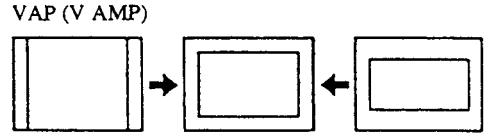
04 TLT (TILT)



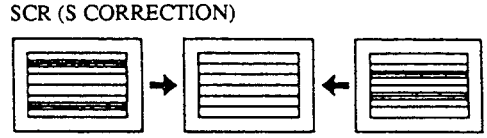
05 VSL (V SLOP)



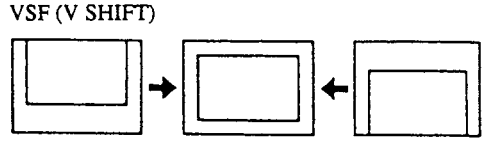
06 VAP (V AMP)



07 SCR (S CORRECTION)



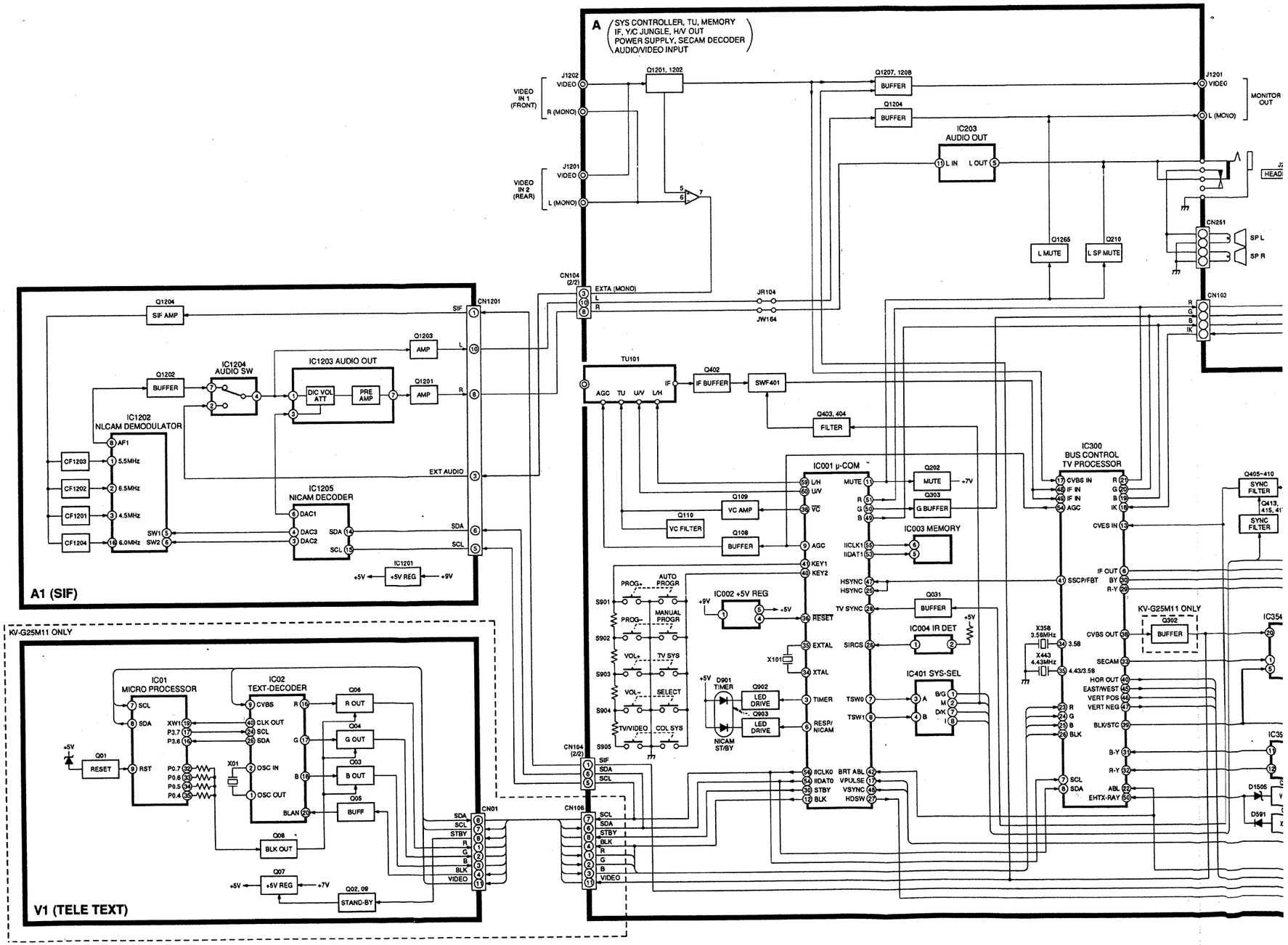
08 VSF (V SHIFT)

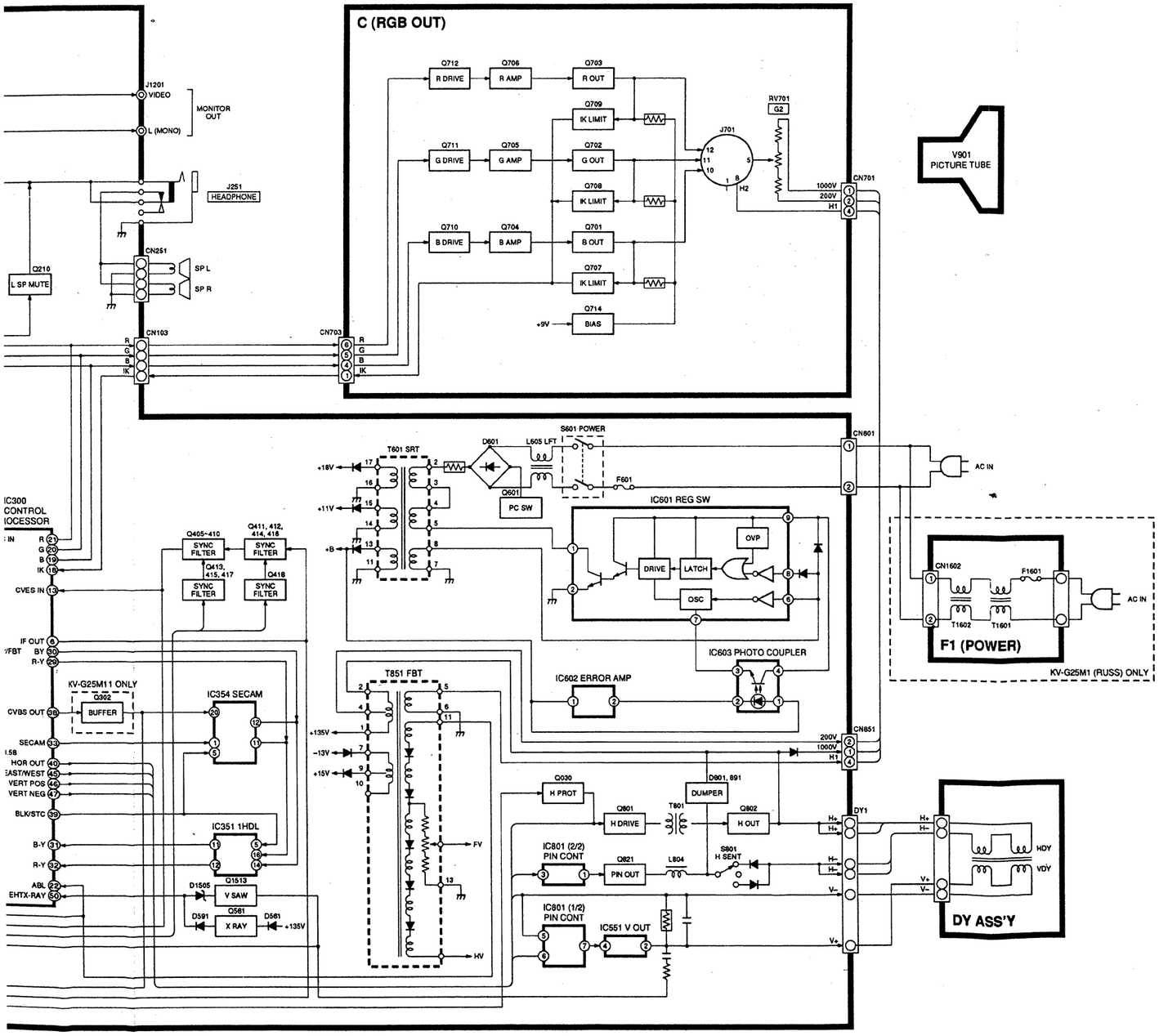


MEMO

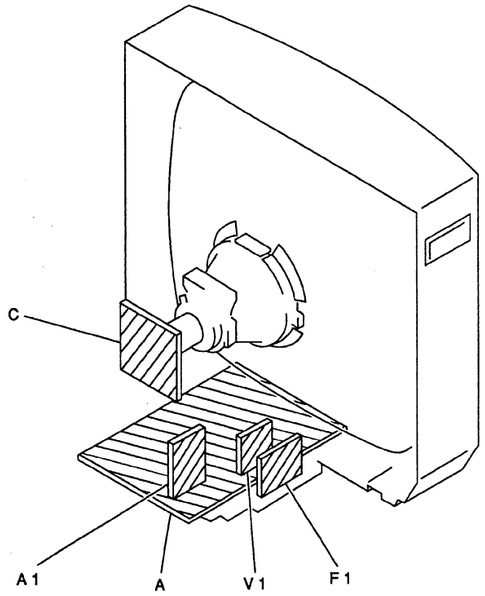
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAMS




C (RGB OUT)
J1201
VIDEO
L (MONO)
MONITOR OUT
J251
HEADPHONE
CN251
SP L
SP R
Q210
L SP MUTE
CN103
R
G
B
IK
CN703
Q712
R DRIVE
Q706
R AMP
Q703
R OUT
Q709
IK LIMIT
Q711
G DRIVE
Q705
G AMP
Q702
G OUT
Q708
IK LIMIT
Q710
B DRIVE
Q704
B AMP
Q701
B OUT
Q707
IK LIMIT
Q714
+9V
BIAS
J701
RV701
G2
1000V
200V
H1
H2
CN701
V901
PICTURE TUBE
S601 POWER
T601 SRT
D601
L605 LFT
F601
CN601
AC IN
Q601
PC SW
IC601 REG SW
OVP
DRIVE
LATCH
OSC
CN1602
F1601
T1602
T1601
AC IN
F1 (POWER)
KV-G25M1 (RUSS) ONLY
IC603 PHOTO COUPLER
IC602 ERROR AMP
T851 FBT
CN851
200V
1000V
H1
IC300 CONTROL IOCESSOR
IN
CVES IN
IF OUT
VFBT
BY
R-Y
CVBS OUT
SECAM
HOR OUT
EAST/WEST
VERT POS
VERT NEG
BLK/STC
B-Y
R-Y
ABL
EHTX-RAY
Q405~410
SYNC FILTER
Q411, 412, 414, 418
SYNC FILTER
Q413, 415, 417
SYNC FILTER
Q418
SYNC FILTER
KV-G25M11 ONLY
Q302
BUFFER
IC354 SECAM
IC351 1HDL
Q1513
V SAW
D1505
Q561
X RAY
D591
D561
+135V
+18V
+11V
+B
+135V
-13V
+15V
FV
HV
Q030
H PROT
Q801
H DRIVE
T801
Q802
H OUT
D801, 891
DUMPER
DY1
IC801 (2/2) PIN CONT
Q821
PIN OUT
L804
S801 H SENT
IC801 (1/2) PIN CONT
IC551 V OUT
H+
H-
V+
V-
HDY
VDY
DY ASS'Y

5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
  kΩ = 100Ω, MΩ = 1000kΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4W (CHIP: 1/10W)

- : nonflammable resistor.
- △ : internal component.
- [ ] : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a color-bar signal input.
  no mark : PAL
  ( ) : SECAM
  〈 〉 : NTSC 4.43
- Readings are taken with a 10 MΩ digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- ✱ : Can not be measured.
- Circled numbers are waveform reference.
- ——— : B + bus.
- — — — : B – bus.
- ➡ : signal path.

Reference Information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFRAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The component identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

PRINTED WIRING BOARD

A [SYS CONTROLLER, TU, MEMORY, IF, Y/C JUNGLE
H/V OUT, POWER SUPPLY, SECAM DECODER, AUDIO/VIDEO INPUT]

A BOARD

IC

IC001	D-11
IC002	E-10
IC003	E-11
IC004	I-13
IC102	E-7
IC203	B-10
IC300	D-6
IC351	D-8
IC354	D-7
IC401	B-6
IC521	E-8
IC551	J-6
IC601	J-8
IC602	H-7
IC603	I-7
IC801	F-6
IC1210	A-2

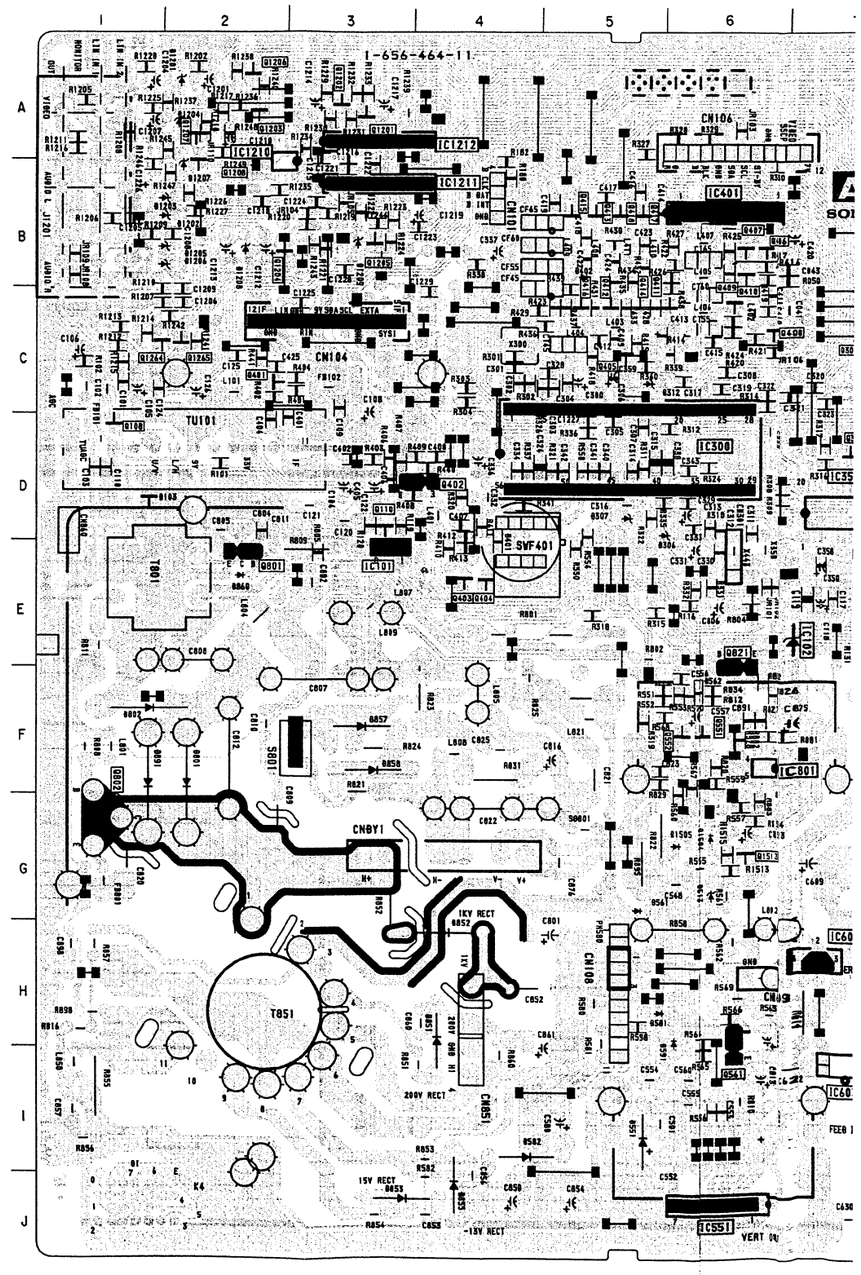
TRANSISTOR

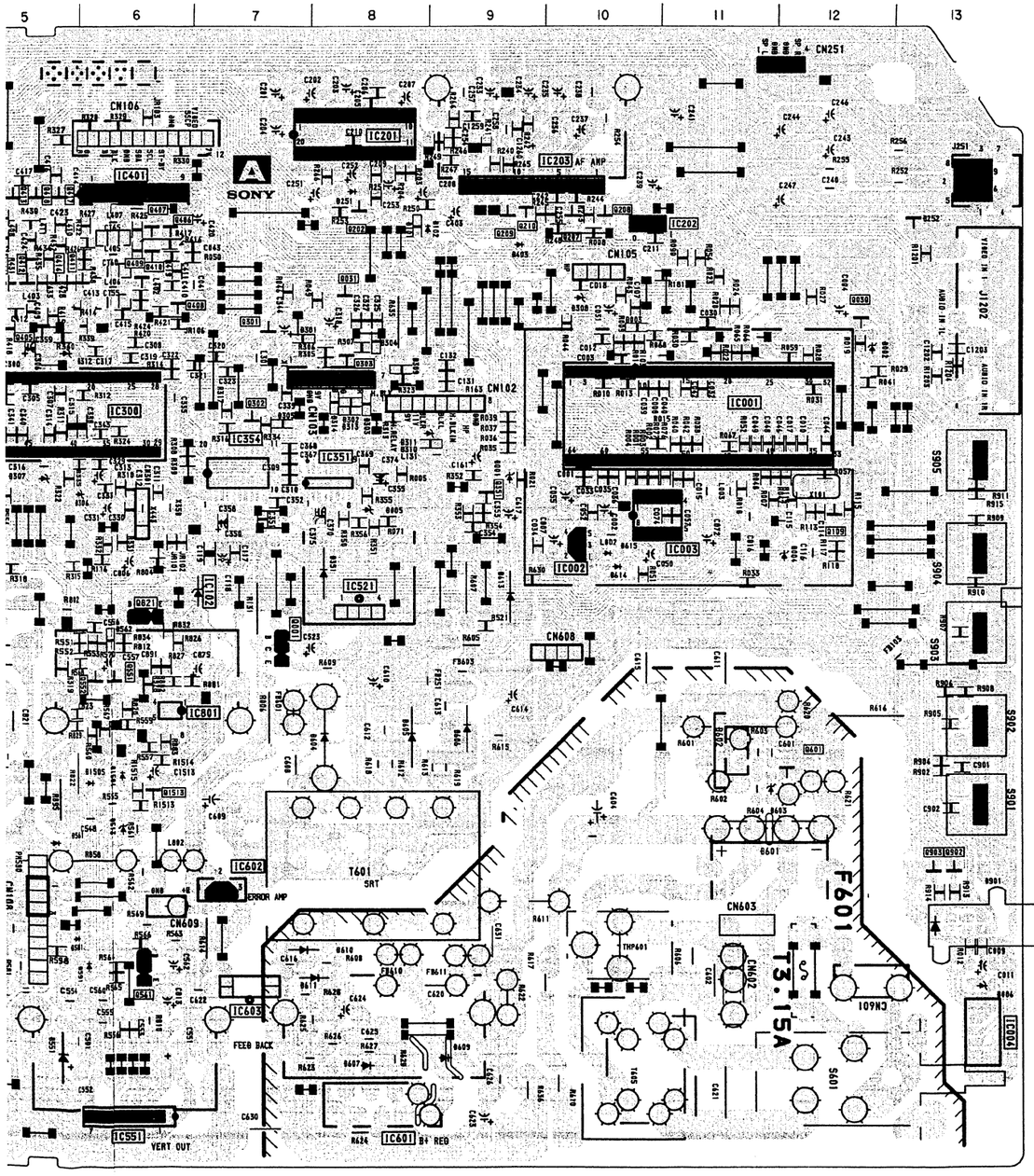
Q030	C-12
Q031	C-8
Q108	D-1
Q109	E-12
Q110	D-3
Q202	B-8
Q207	B-10
Q208	B-10
Q210	B-9
Q301	C-7
Q302	D-7
Q303	C-8
Q402	D-4
Q403	E-4
Q404	E-4
Q405	C-5
Q406	B-6
Q407	B-6
Q408	C-6
Q409	C-6
Q410	B-6
Q411	C-6
Q412	C-5
Q413	B-5
Q414	C-5
Q415	B-5
Q416	C-5
Q417	B-5
Q418	B-5
Q561	I-6
Q601	G-12
Q801	E-2
Q802	G-1
Q821	E-6
Q902	H-13
Q903	H-13
Q1201	A-3
Q1202	A-3
Q1203	A-2
Q1204	B-2
Q1207	A-2
Q1208	B-2
Q1265	C-2
Q1513	G-6

DIODE

D001	D-9
D002	C-12
D003	C-10
D004	E-12
D005	E-8
D101	B-8
D102	B-9
D103	D-1
D251	B-8
D252	B-13
D301	C-7
D302	D-8
D303	D-8
D304	C-8
D305	D-7
D306	D-6
D307	D-5
D308	C-10
D310	D-8
D311	D-8
D312	C-5
D313	D-8
D314	D-8
D351	E-8
D401	D-4
D402	B-5
D403	B-9
D513	G-6
D551	I-5
D561	G-5
D591	H-6
D601	G-11
D602	G-11
D603	G-11
D604	G-8
D605	G-8
D606	F-9
D607	I-8
D609	I-9
D610	H-7
D611	I-8
D801	F-2
D802	F-1
D851	H-4
D852	H-4
D853	J-3
D855	J-4
D857	F-3
D858	F-3
D860	E-2
D891	F-1
D901	H-13
D1201	A-2
D1202	B-2
D1207	B-2
D1208	B-2
D1504	G-6
D1505	G-6

– A Board –

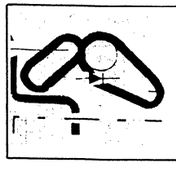




A BOARD WAVEFORMS

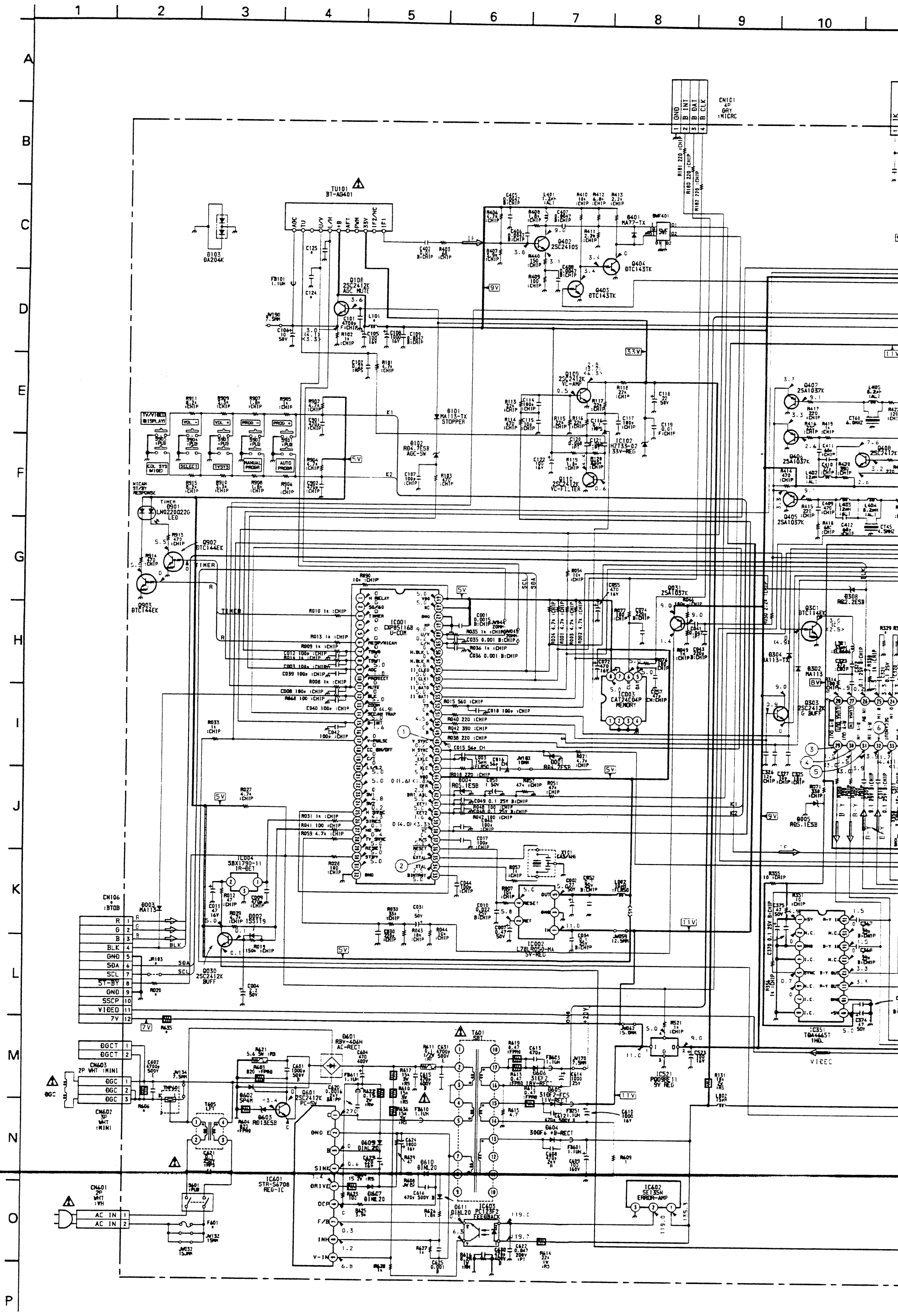
① 5.0Vp-p (H)	② 4.0Vp-p	③ PAL 0.7Vp-p (H)
③ NTSC 0.6Vp-p (H)	③ SECAM 1.6Vp-p (H)	④ PAL 0.6Vp-p (H)
④ NTSC 0.4Vp-p (H)	④ SECAM 1.2Vp-p (H)	⑤ PAL/SECAM PAL : 1.3Vp-p (H) SECAM : 1.5Vp-p (H)
⑤ NTSC 0.8Vp-p (H)	⑥ PAL/SECAM PAL : 1.0Vp-p (H) SECAM : 1.2Vp-p (H)	⑥ NTSC 0.6Vp-p (H)
⑦ PAL/SECAM 3.6Vp-p (H)	⑦ NTSC 4.0Vp-p (H)	⑧ PAL/SECAM 3.3Vp-p (H)
⑧ NTSC 4.0Vp-p (H)	⑨ PAL/SECAM PAL : 3.4Vp-p (H) SECAM : 3.0Vp-p (H)	⑨ NTSC 4.0Vp-p (H)

⑩ PAL 2.2Vp-p (H)	⑩ NTSC 3.0Vp-p (H)	⑩ SECAM 2.2Vp-p (H)
⑪ PAL 1.0Vp-p (H)	⑪ NTSC 1.3Vp-p (H)	⑪ SECAM 1.0Vp-p (H)
⑫ PAL 0.7Vp-p (H)	⑫ NTSC 0.6Vp-p (H)	⑫ SECAM 1.5Vp-p (H)
⑬ PAL 0.6Vp-p (H)	⑬ NTSC 0.5Vp-p (H)	⑬ SECAM 1.2Vp-p (H)
⑭ 150Vp-p (H)	⑮ 800Vp-p (H)	⑯ 2Vp-p (V)



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

(1) Schematic Diagram of A Board


TU101
BT-AG401
IC001
CXP85116B
U-COM
IC002
L78L05D-MA
5V-REG
IC003
CAT24C04P
MEMORY
IC004
SBX1790-11
IR-DET
IC102
H7T33-02
33V-REG
IC521
PQ09RE11
5V REG
IC601
STR-56708
REG-IC
IC602
SE135N
ERROR-AMP
IC603
PC123F2
FEEDBACK
Q101
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AGC MUTE
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2SC2412K
VC-AMP
Q103
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VC-FILTER
Q401
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PC-5V
Q902
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Q903
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Q030
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BUFF
Q031
2SA1037K
Q301
DTC114EK
Q303
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G BUFF
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2SA1037K
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RBV-406H
AC-REC
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5P4M
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RD13ESB
Q604
RD5.1ESB
Q605
31DF2-FC5
11V-RECT
Q606
31DF2
18V-RECT
Q607
30DF6
+B-RECT
Q608
RD5.1ESB
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DINL20
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DINL20
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DINL20
D101
MA113-TX
STOPPER
D102
RD4.7ESB
AGC-SW
D103
DA204K
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MA113-TX
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MA77-TX
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MA113
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MA113-TX
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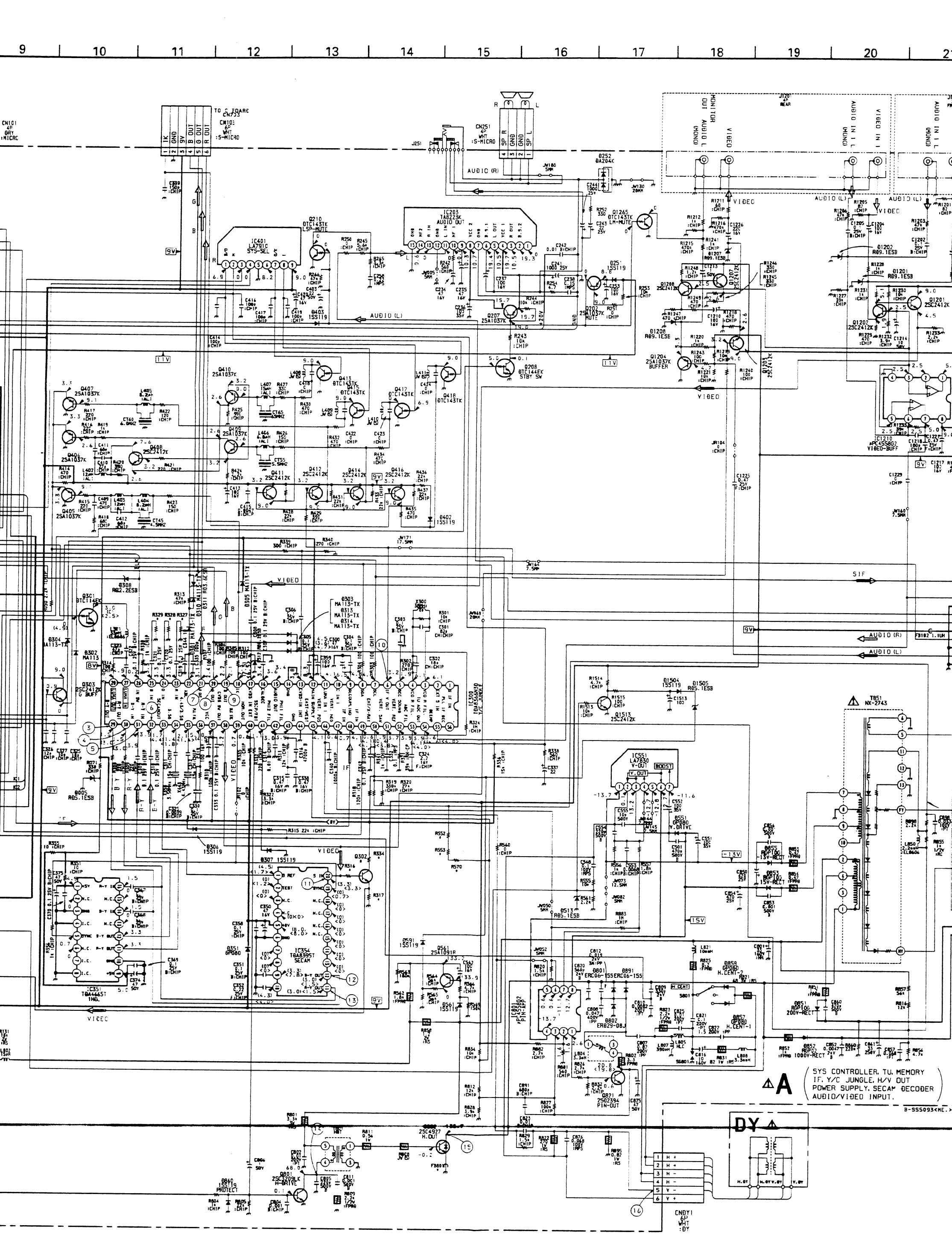
RD5.1ESB


CN101 6P GRY :MICRO
CN103 6P WHT :S-MICRO
CN733
CN251 4P WHT :S-MICRO
J251
AUDIO (R)
AUDIO (L)
VIDEO
MONITOR OUT AUDIO L (MONO)
VIDEO
AUDIO IN L (MONO)
VIDEO IN 1
AUDIO IN L (MONO)
J1201 4P REAR
IC203 TA8223K AUDIO OUT
IC401 LA7910 SYS-SEL
Q1265 DTC143TK LM-MUTE
Q210 DTC143TK LSP-MUTE
Q207 2SA1037K
Q208 DTC144EK STBY SW
Q1204 2SA1037K BUFFER
Q1208 2SC2412K
Q1201 2SC2412K
Q1202 2SC2412K
Q1207 2SC2412K
Q1203 2SA1037K
Q1205 2SA1037K
Q1206 2SC2412K
IC1210 APC4558G2 VIDEO-BUFF
Q410 2SA1037K
Q413 DTC143TK
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Q304 MA113-TX
Q302 MA113
Q303 2SC2412K G BUFF
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IC300 TDA8366N5D Y/C JUNGLE
IC354 TBA839ST SECAM
IC351 TBA466ST 1H DL
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Q501 2SC4209LK H-DRIVE
Q502 2SC4927 H.OUT
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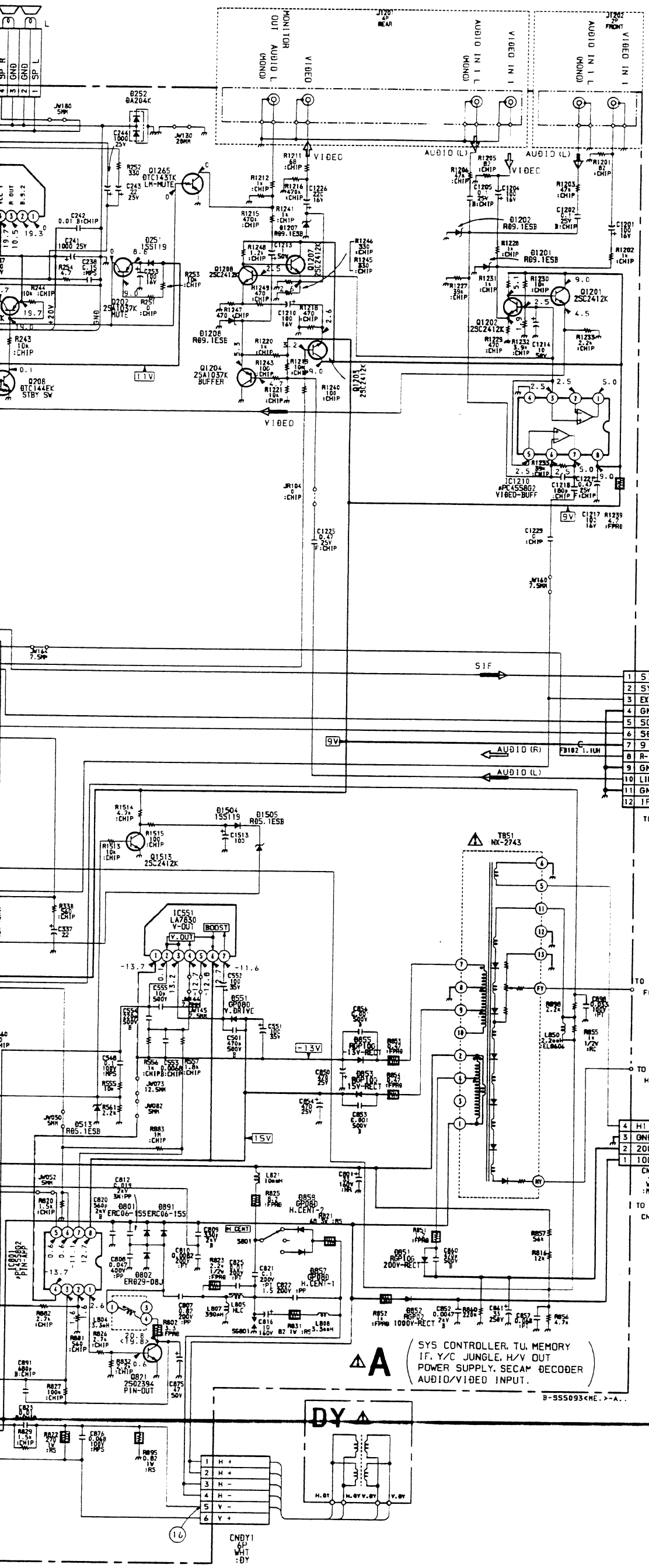
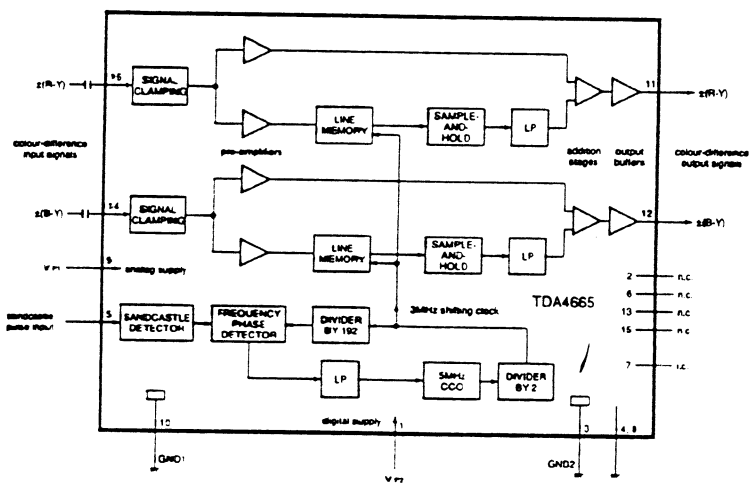


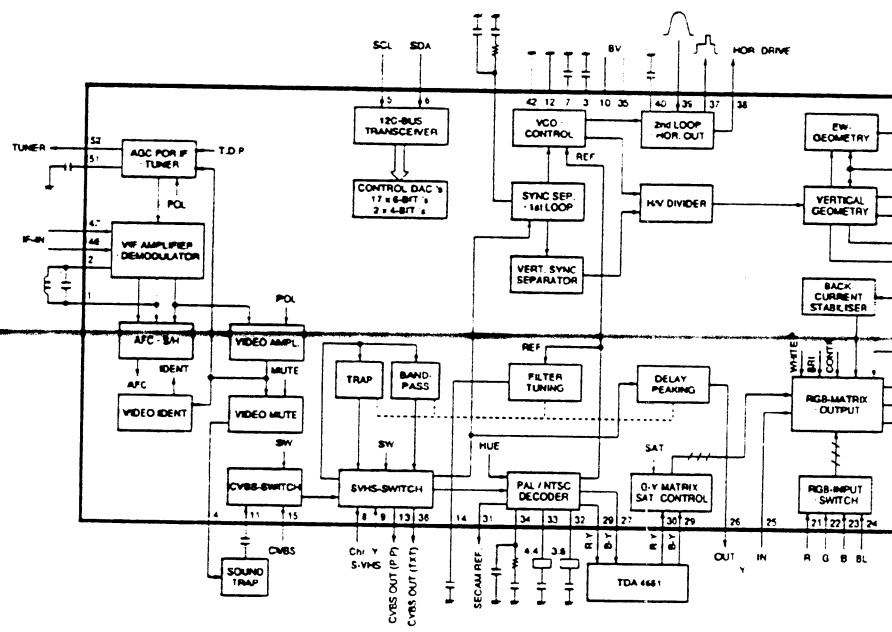
A BOARD * MARK LIST

	KV-G25M1(ME)	KV-G25M1(HK)	KV-G25M1(
CN106	NOT USED	NOT USED	NOT US
CN601	TO POWER CORD	TO POWER CORD	TO F1 BOARD
F601	T3.15A	T3.15A	NOT US
FB801	1.1uH	1.1uH	1.9uH
JR103	NOT USED	NOT USED	NOT US
JW032	NOT USED	NOT USED	15MM
JW132	NOT USED	NOT USED	15MM
Q302	NOT USED	NOT USED	NOT USE
R020	NOT USED	NOT USED	NOT USE
R316	NOT USED	NOT USED	NOT USE
R317	NOT USED	NOT USED	NOT USE
R327	0 : CHIP	0 : CHIP	0 : CHIP
R328	0 : CHIP	0 : CHIP	0 : CHIP
R329	0 : CHIP	0 : CHIP	0 : CHIP
R334	NOT USED	NOT USED	NOT USE
R552	NOT USED	NOT USED	220K : CHIP
R553	NOT USED	NOT USED	0 : CHIP
R570	NOT USED	NOT USED	0 : CHIP
R635	NOT USED	NOT USED	NOT USE

A BOARD IC351 TDA4665T



A BOARD IC300 TDA8366N3D



CN104
12P
:BTOB

1	SIF
2	SYS1 (M/S)
3	EXTA MONO
4	GND
5	SCL
6	SDA
7	9 (V)
8	A-IN (VOL OUT)
9	GND
10	LIN (TV OUT)
11	GND
12	IF

TO A1 BOARD
CN1201

TO C BOARD
FOCUS

TO PICTURE TUBE
HV

4	H1
3	GND
2	200V
1	1000V

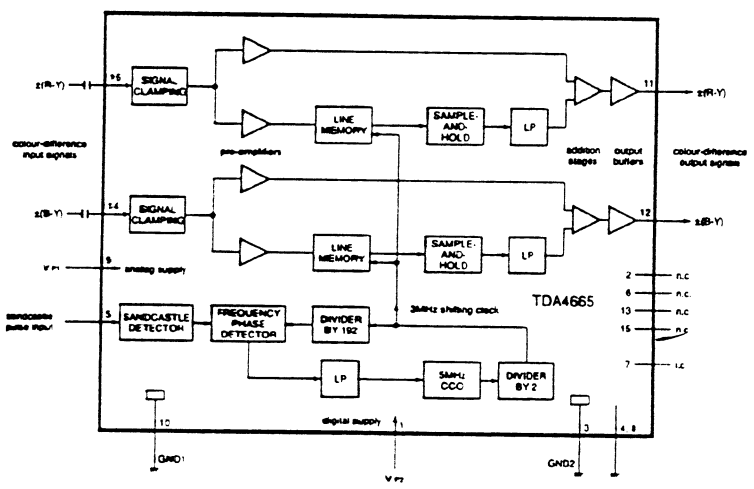
CN851
4P
WHT
:MINI

TO C BOARD
CN701

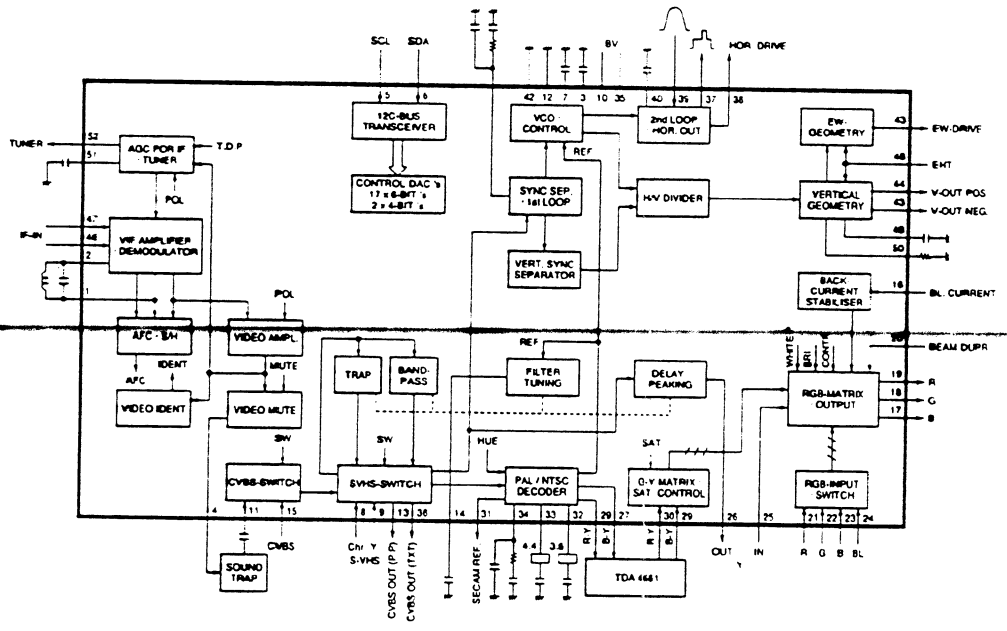
A BOARD * MARK LIST

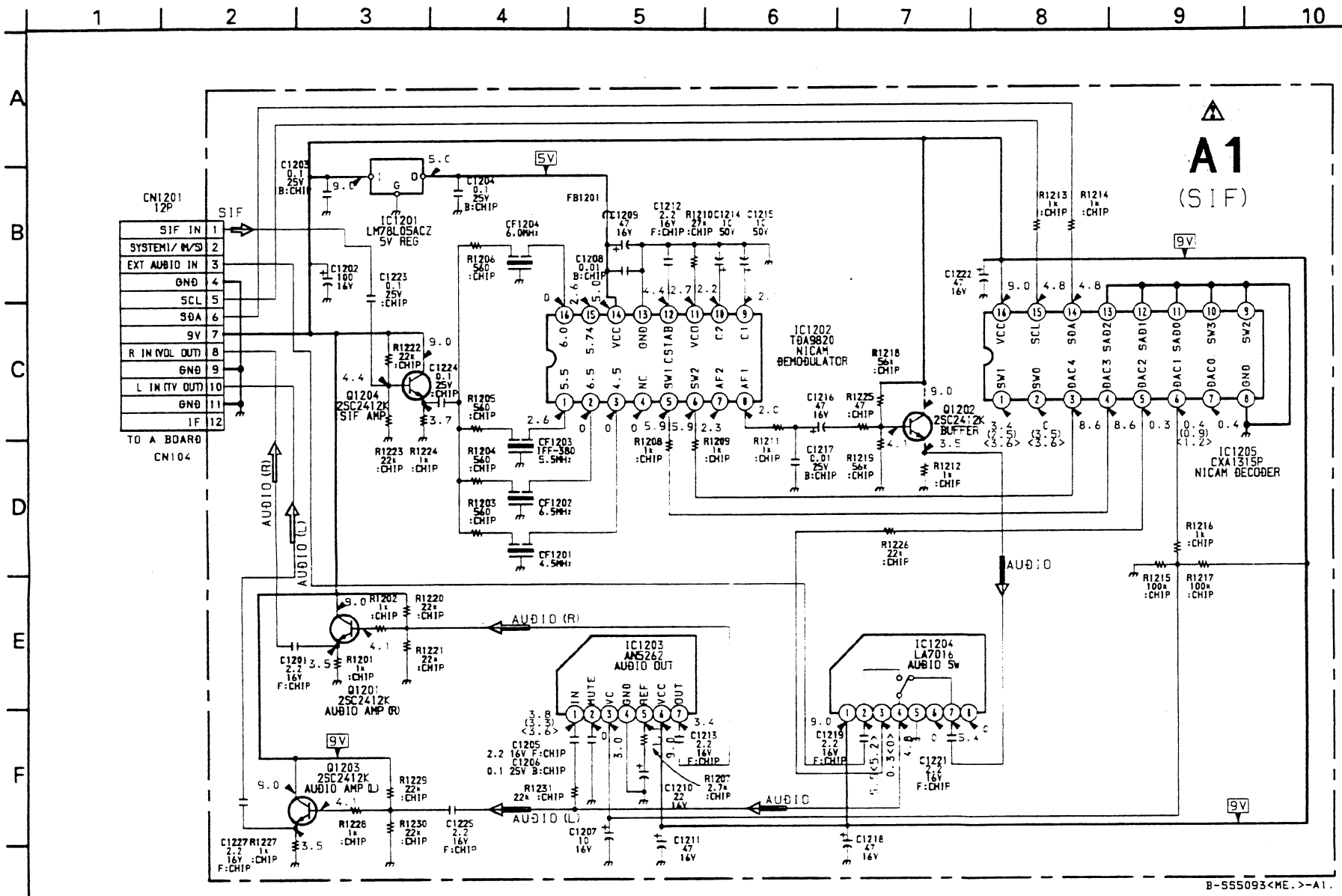
	KV-G25M1(ME)	KV-G25M1(HK)	KV-G25M1(RUSS)	KV-G25M11
CN106	NOT USED	NOT USED	NOT USED	12P : BTOB
CN601	TO POWER CORD	TO POWER CORD	TO F1 BOARD CN1602	TO POWER CORD
F601	T3.15A	T3.15A	NOT USED	T3.15A
FB801	1.1uH	1.1uH	1.9uH	1.1uH
JR103	NOT USED	NOT USED	NOT USED	0 : CHIP
JW032	NOT USED	NOT USED	15MM	NOT USED
JW132	NOT USED	NOT USED	15MM	NOT USED
Q302	NOT USED	NOT USED	NOT USED	2SC2412K
R020	NOT USED	NOT USED	NOT USED	100 : CHIP
R316	NOT USED	NOT USED	NOT USED	4.7K : CHIP
R317	NOT USED	NOT USED	NOT USED	1K : CHIP
R327	0 : CHIP	0 : CHIP	0 : CHIP	100 : CHIP
R328	0 : CHIP	0 : CHIP	0 : CHIP	100 : CHIP
R329	0 : CHIP	0 : CHIP	0 : CHIP	100 : CHIP
R334	NOT USED	NOT USED	NOT USED	470 : CHIP
R552	NOT USED	NOT USED	220K : CHIP	220K : CHIP
R553	NOT USED	NOT USED	0 : CHIP	0 : CHIP
R570	NOT USED	NOT USED	0 : CHIP	0 : CHIP
R635	NOT USED	NOT USED	NOT USED	22 2W :RS

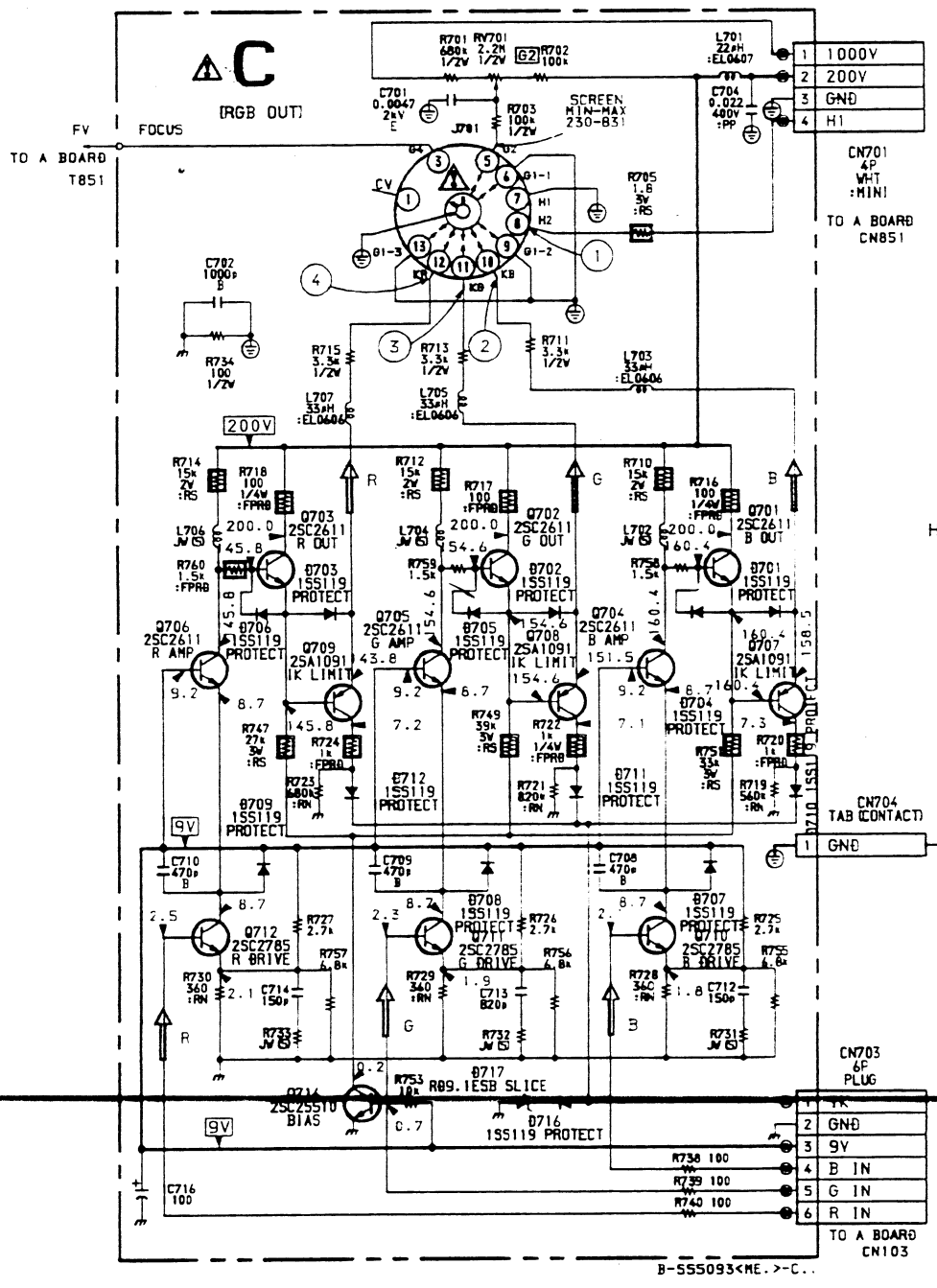
A BOARD IC351 TDA4665T

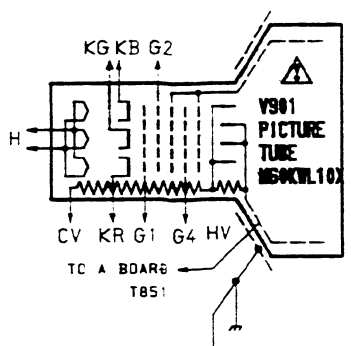


A BOARD IC300 TDA8366N3D





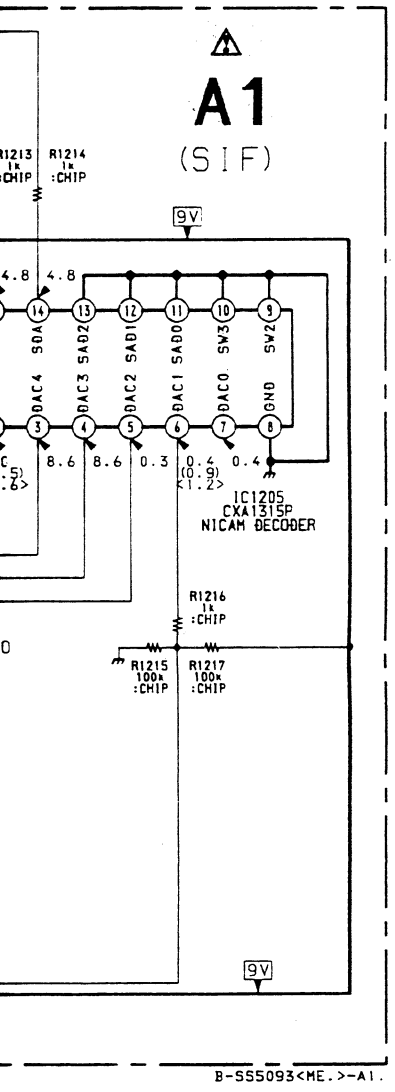


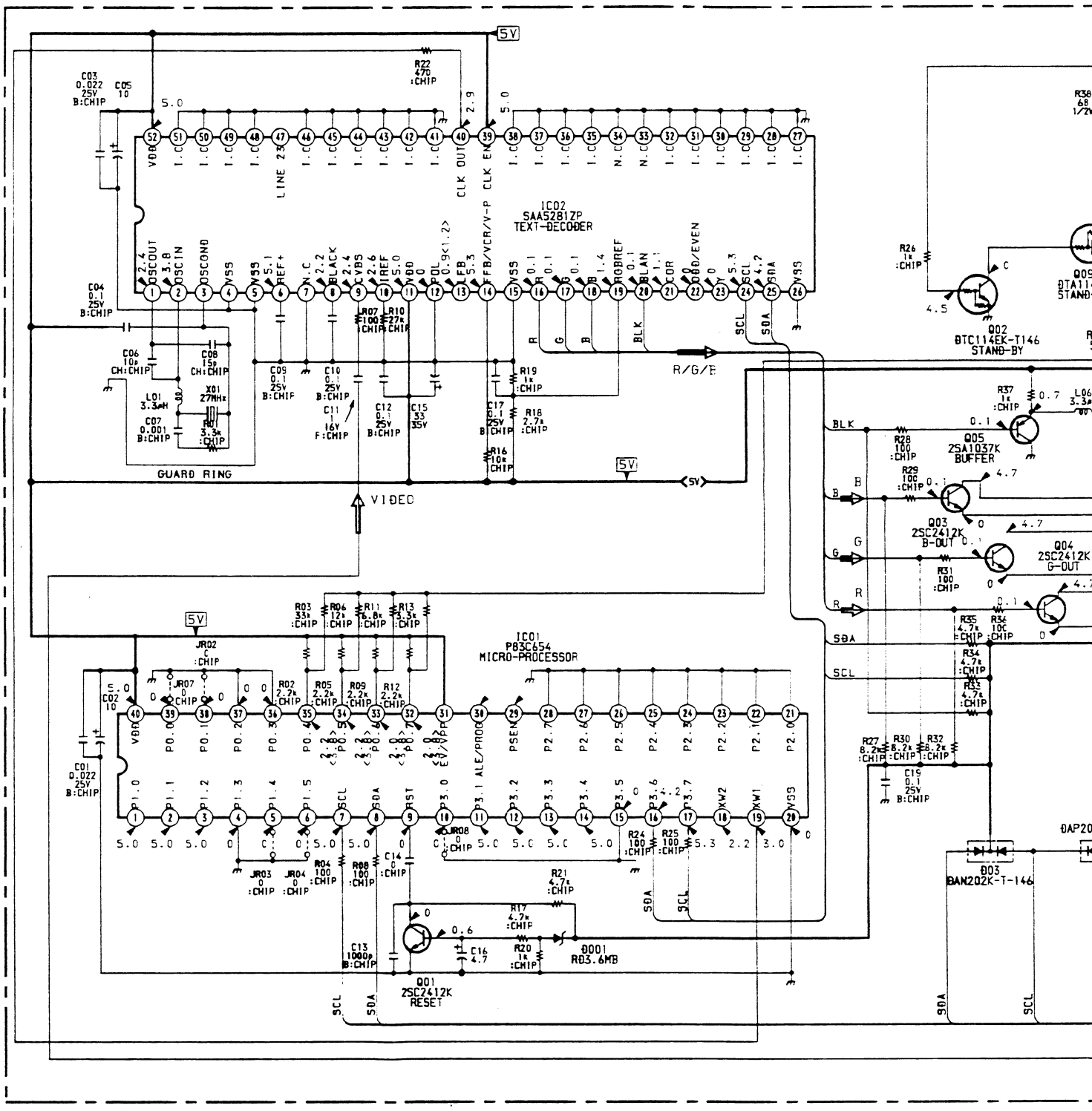


C BOARD WAVEFORMS

① 22Vp-p (H)	② PAL/SECAM 110Vp-p (H)
② NTSC 150Vp-p (H)	③ PAL/SECAM PAL : 100Vp-p (H) SECAM : 140Vp-p (H)
③ NTSC 150Vp-p (H)	④ PAL/SECAM 140Vp-p (H)
④ NTSC 150Vp-p (H)	

(KV-G25M11 only)

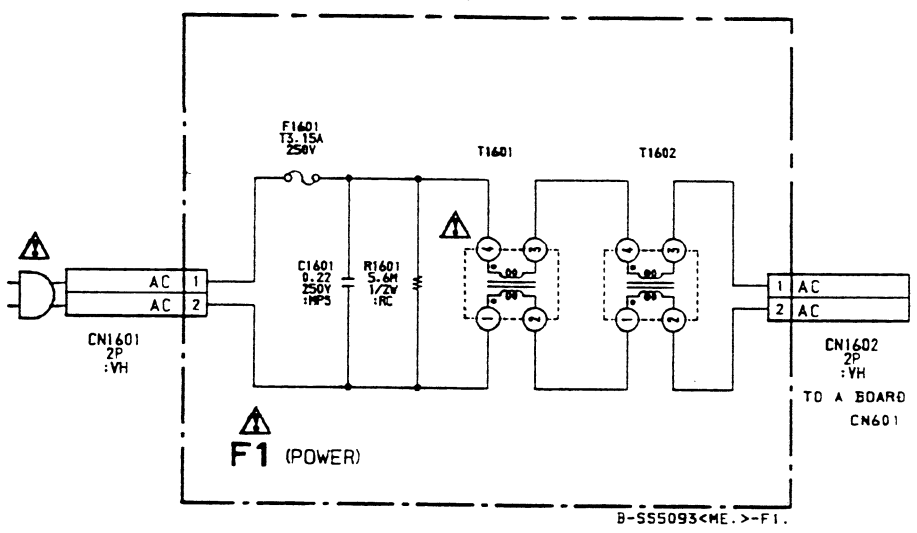




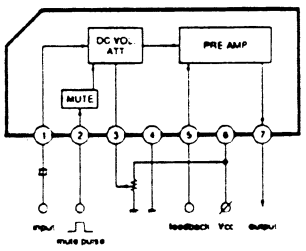
C BOARD WAVEFORMS

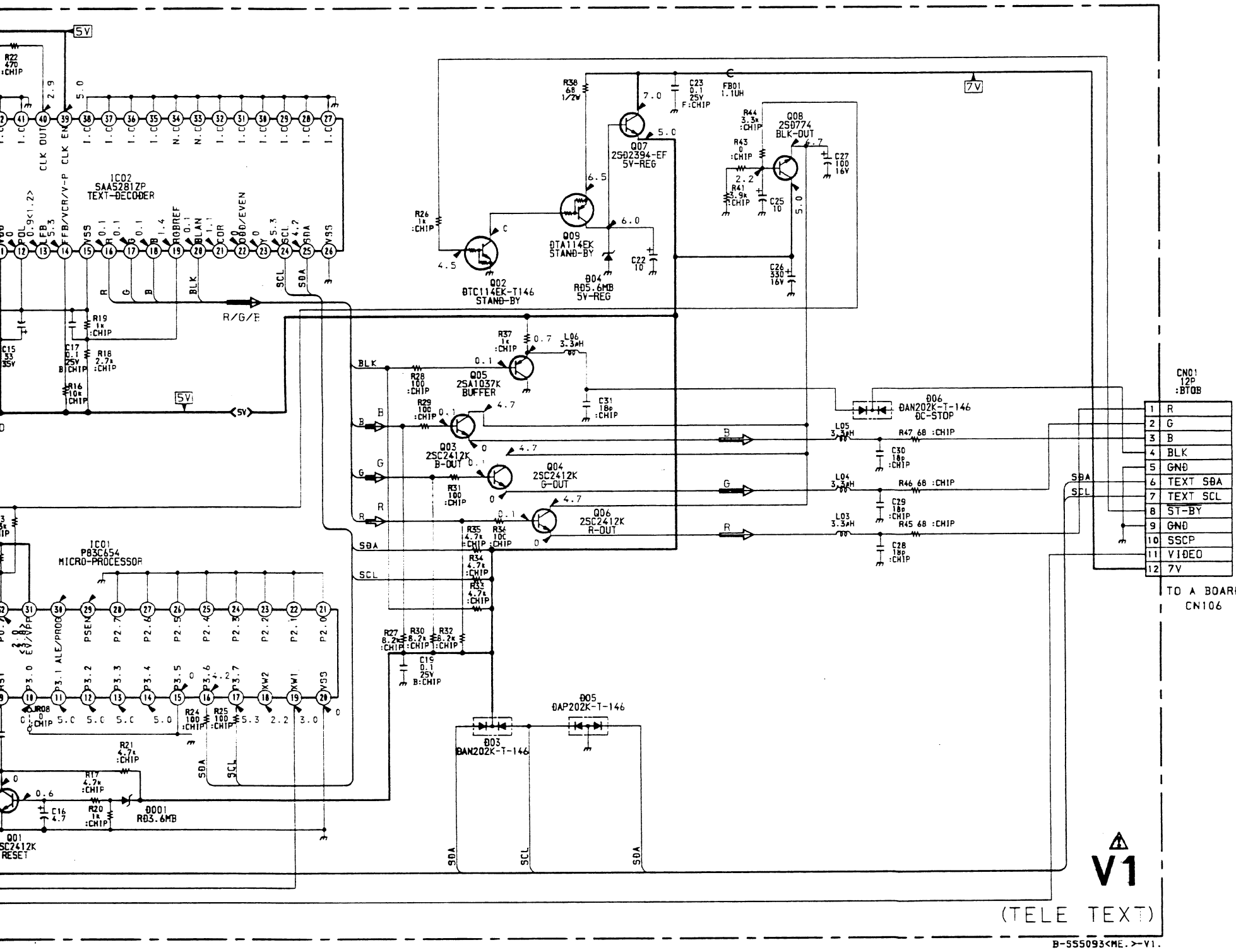
① 22Vp-p (H)	② PAL/SECAM 110Vp-p (H)
② NTSC 150Vp-p (H)	③ PAL/SECAM PAL : 100Vp-p (H) SECAM : 140Vp-p (H)
③ NTSC 150Vp-p (H)	④ PAL/SECAM 140Vp-p (H)
④ NTSC 150Vp-p (H)	

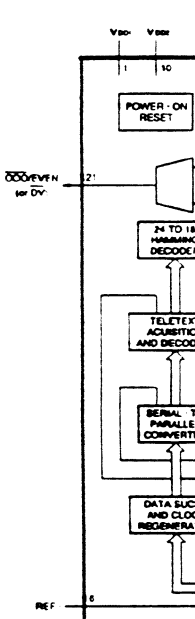
(KV-G25M1 (RUSS) only)



A1 BOARD IC1203 AN5262



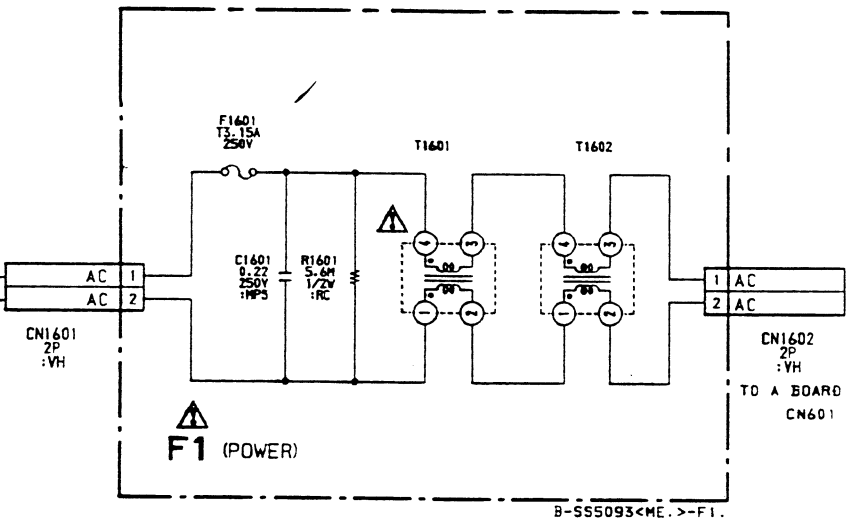


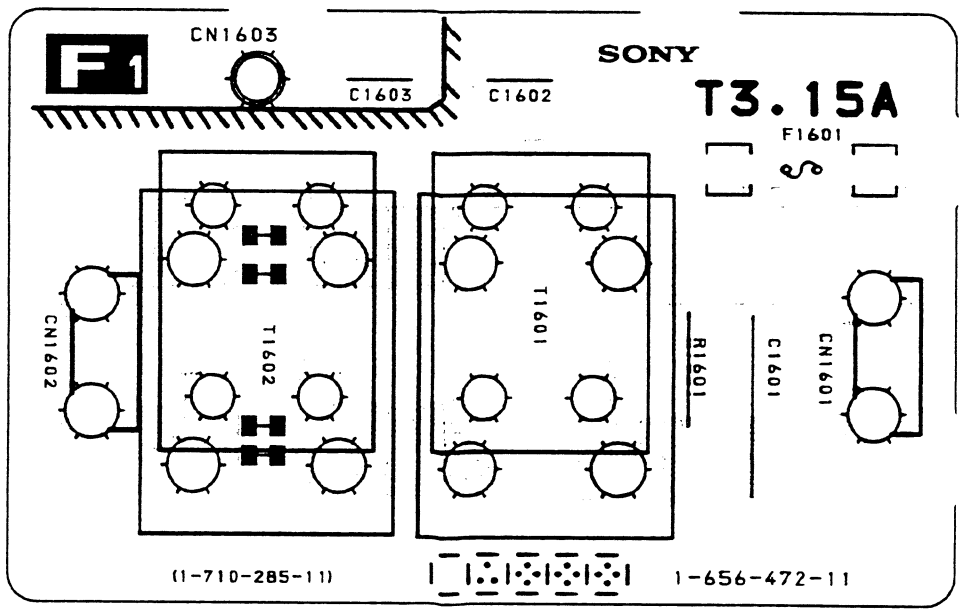


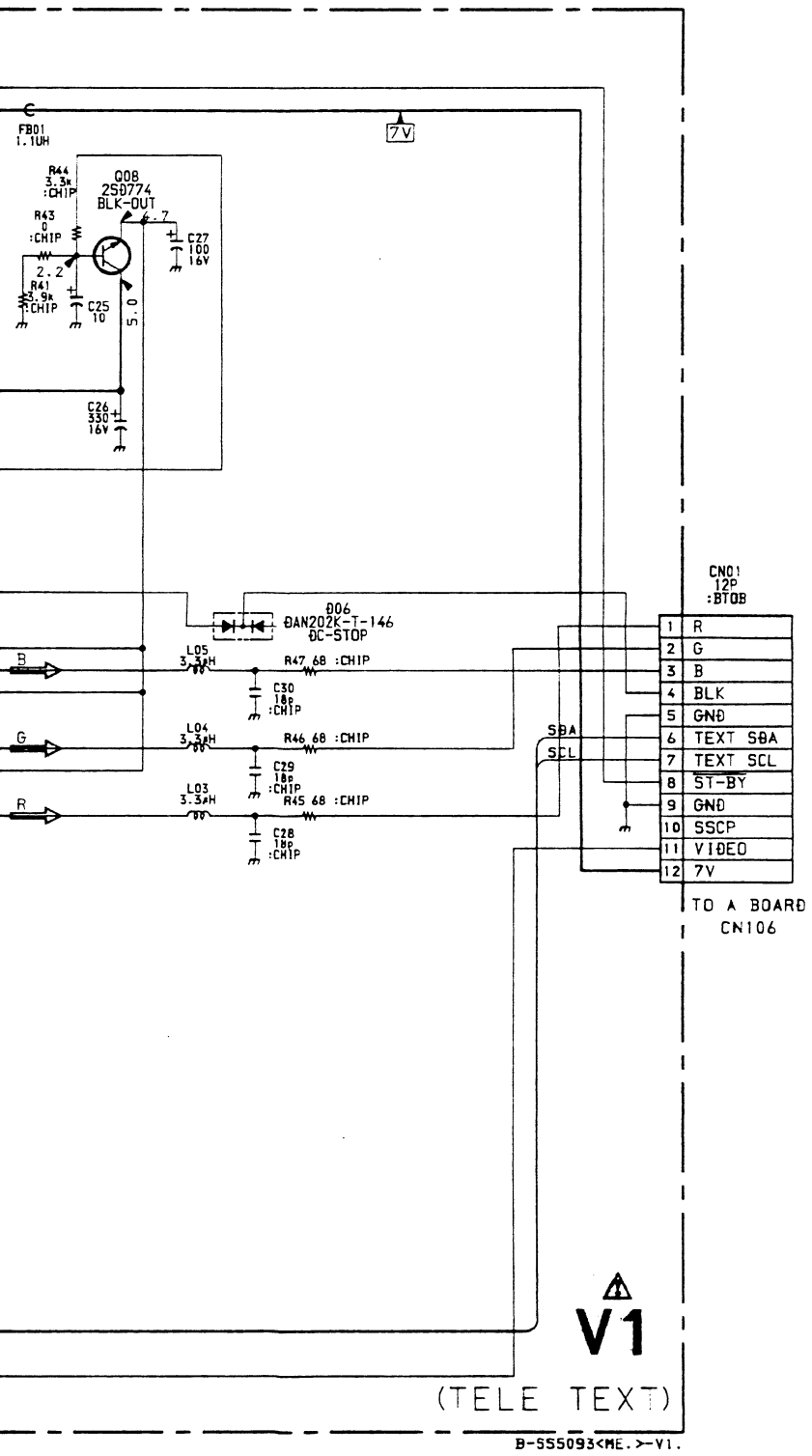
PRINTED WIRING BOARD **F1** [POWER]

– F1 Board – (KV-G25M1 (RUSS) only)

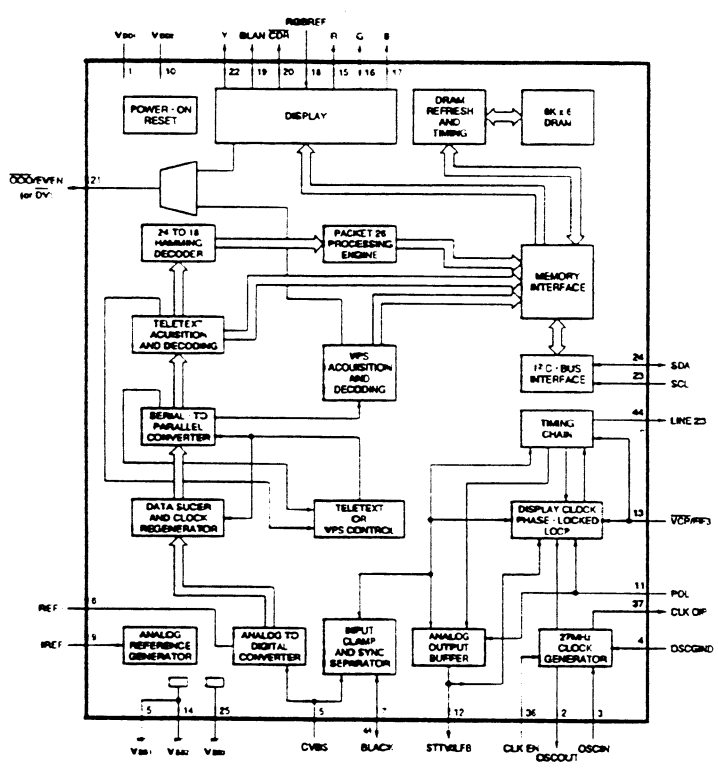
(KV-G25M1 (RUSS) only)





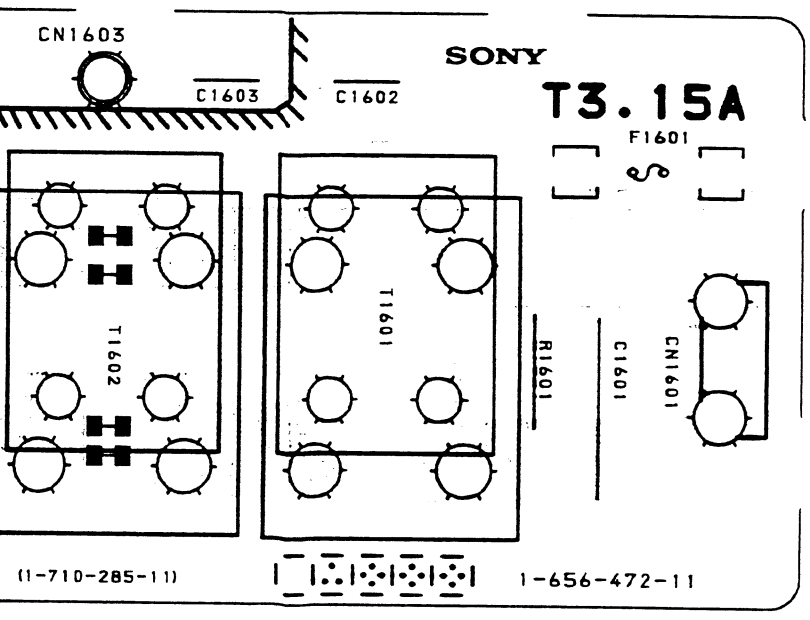


V1 BOARD IC02 SAA5281ZP

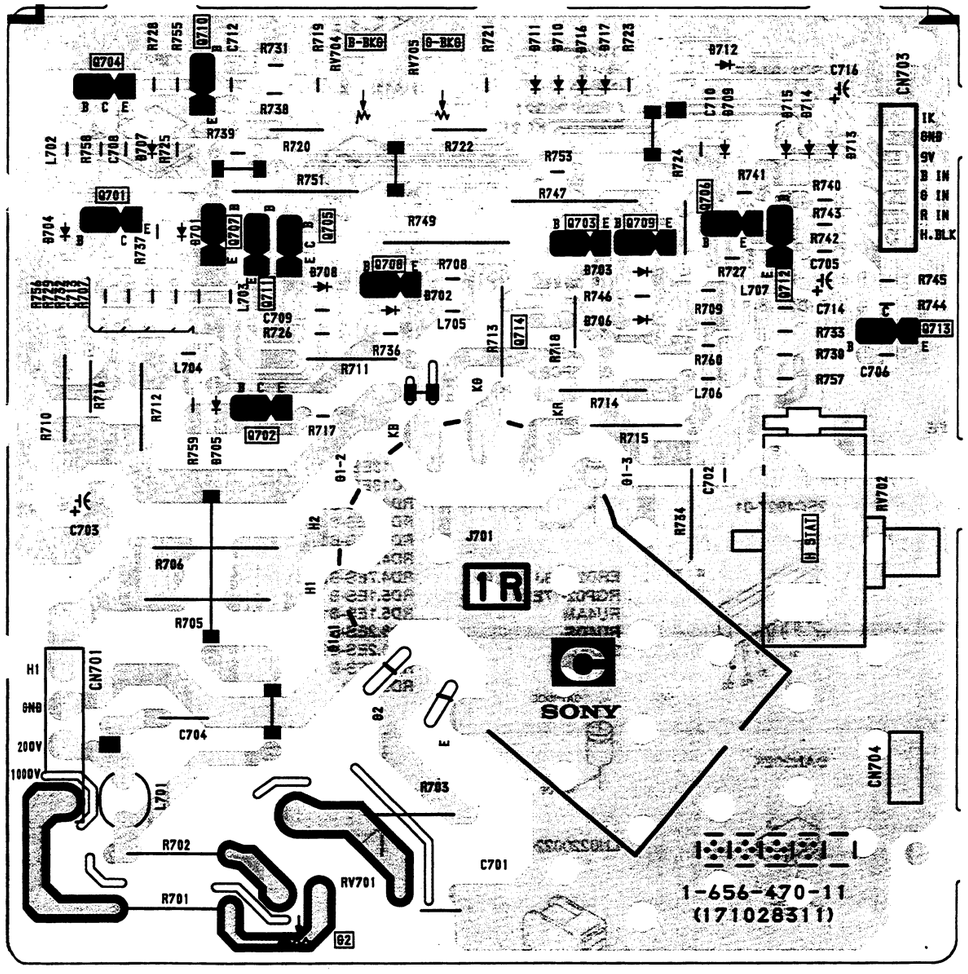


WIRING BOARD **F1** [POWER]

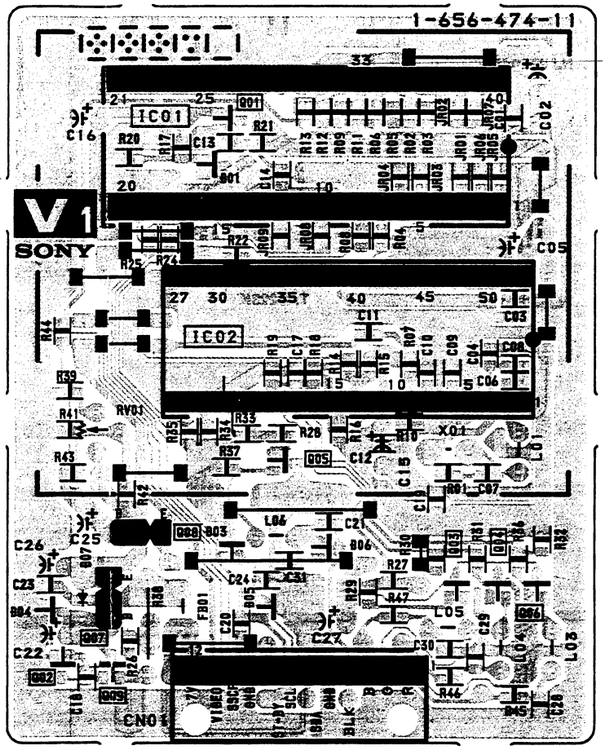
– (KV-G25M1 (RUSS) only)



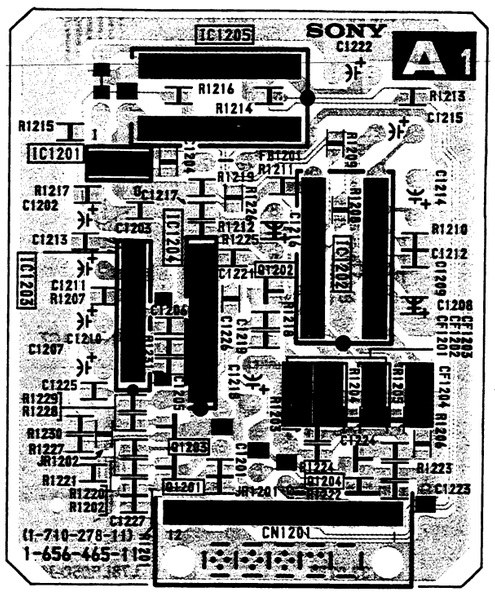
– C Board –



– V1 Board – (KV-G25M11 only)



– A1 Board –



6-1. CHASSIS

●: BVTP3 x 12 7-685-648-79
■: BVTP4 x 16 7-685-663-79
▲: BVTP3 x 10 7-685-647-79